THE FORTY-FIFTH YEAR.

Companion to the Almanac;

OR,

YEAR-BOOK

OF

GENERAL INFORMATION

FOR

1872.

PART I.

GENERAL INFORMATION ON SUBJECTS OF MATHEMATICS, NATURAL PHILOSOPHY, GEOGRAPHY, FINE ARTS, POLITICAL ECONOMY, AND HISTORY.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, METROPOLITAN CHARITIES, LEGISLATION, STATISTICS, AND CHRONICLE OF 1870-71.

LONDON:

PRINTED FOR

THE COMPANY OF STATIONERS,

AND SOLD BY J. GREENHILL, AT THEIR HALL, LUDGATE HILL

PRICE TWO SHILLINGS AND SIXPENCE; OR, FOUR SHILLINGS BOUND WITH THE BRITISH ALMANAC.

HARRISON AND SONS,
PRINTERS IN ORDINARY TO HER MAJESTY,
ST. MARTIN'S LANE.

CONTENTS.

PART I.

GENERAL INFORMATION ON SUBJECTS OF MATHEMATICS, NATURAL PHILOSOPHY, GEOGRAPHY, FINE ARTS, POLITICAL ECONOMY, AND HISTORY.

Page

On the Philosophy of Statistics. By W. S. B. WOOLHOUSE, F.R.A.S., F.S.S. 5

The Fine Arts at the International Exhibition. By ARTHUR LOCKER 23

The Present State of Music in England. By CHARLES MACKESON 49

Industrial Results of Photography. By JOHN PLUMMER . . 66

The Postal Telegraph System. By GEORGE DODD 79

The Largest Book in the World. (Notes on the Specification of British Patents. 1617—1869.) By WILLIAM E. A. AXON 105

The Census of 1871. By ROBERT SMILES 123

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, METROPOLITAN CHARITIES, LEGISLATION, STATISTICS, AND CHRONICLE OF 1870-71.

Architecture and Public Improvements. By JAMES THORNE

1. General Progress. Art and Public Monuments . 140
2. Public and Sanitary Works 147
3. Churches and Chapels 151
4. Buildings for Public Purposes 163
5. Buildings connected with Education, Art, &c. . 166
6. Street Architecture 170
7. Bridges, Docks, &c. 176

Metropolitan Charities at the Present Day. By CHARLES MACKESON.

1. Charity and Legislation 178
2. Medical Charities 179
3. Asylums and Almshouses for the Aged . . 187
4. Benevolent and Provident Funds and Pension Societies 190
5. Patriotic Funds 191
6. Institutions for Children 197
7. Charity Organisation and Repression of Mendicity 199

Table of all the Public General Acts of Parliament for 1871 . 204

Abstracts of Important Acts of Parliament :—

1. Army and Navy :
   Army Regulation 214
2. Church and Education :
   University Tests 215
   Ecclesiastical Dilapidations 215
   Resignation of Incumbents 217
   Sequestration of Livings 218

Abstracts of Important Acts of Parliament (*continued*)— Page
Ecclesiastical Titles 218
Private Chapels in Schools and Institutions . 218
3. Crime and Pauperism:
Threats and Molestations 219
Discharge of Paupers from Workhouses . 220
Prevention of Crime 221
4. Finance and Taxation:
Bank Holidays 223
East India Stock (Dividends) 223
Life Assurance Companies 224
Stamp Act (1870) Amendment 224
5. Law and Justice:
Judicial Committee of Privy Council . . . 224
Loans under the Poor Law Acts . . . 225
Lodgers' Goods Protection 225
Bankruptcy Disqualification 225
County Justices' Disqualification Amendment . 226
6. Trade and Shipping:
Merchant Shipping Acts Amendment . . 226
Workshop Regulation Act Amendment . . 227
Factory and Workshops Acts Amendment . 227
Trades Unions 228
Public-house Licenses Suspension . . . 229
Pedlars' Act 230
7. Local Government:
Local Government Board 230
Metropolis Water Supply 231
Public Libraries 232
Vaccination 232
Fairs 233
Land for Public Parks, Schools, and Museums . 234
8. Miscellaneous:
Post Office Duties 234
Dogs 234
Petroleum 235
Industrial and Provident Societies . . . 235

Abstracts of Parliamentary and other Official Documents:
1. Finance, Taxation, and Currency 236
2. General Commerce and Navigation . . . 243
3. Trade and Agriculture 250
4. Population, Public Employment, and Vital Statistics 254
5. Crime, Pauperism, and Accidents 259
6. Education 264
7. Social Economy 267
8. Emigration 268
9. The Post Office 270
10. Miscellaneous 273

Chronicle of Events and Occurrences (1870–71) 275

Necrological Table 1870-71 281

Dates and Duration of Minimum Rates of Bank Discount (1773—1871) 287

INDEX 288

COMPANION TO THE ALMANAC

FOR

1872.

PART I.

GENERAL INFORMATION ON SUBJECTS OF MATHEMATICS NATURAL PHILOSOPHY, GEOGRAPHY, FINE ARTS POLITICAL ECONOMY, AND HISTORY.

ON THE PHILOSOPHY OF STATISTICS.

STATISTICS, generally considered, is a term of very comprehensive import, and is to be understood as having reference to an important collection of facts properly arranged and systematized in the form of numerical tables, for the purpose of conveying such information or data as may best assist in the investigation and discussion of particular subjects of inquiry. The general principles applicable to these investigations are, for the most part, intimately allied with the mathematical theory of probabilities, and constitute the true science of statistics. It will, moreover, be found, on examination, that the same identical principles lie at the foundation of all the physical and inductive sciences so far as they originally and necessarily depend upon experiment and observation.

The word statistics, derived from the Latin, *status*, signifies a state, condition, or standing. The subject of statistics has, however, by some writers, been unnecessarily restricted to that department of political science which is concerned in collecting and arranging facts illustrative of the condition and resources of a nation. It is chiefly to the advancement and growing importance of political economy that we are indebted for the cultivation of this particular branch of statistics. The fundamental doctrines of that science, which are directly concerned about the prosperity and happiness of mankind, were not reduced to any method or system until the middle of the last century; and since that time political economy has been more assiduously cultivated as an inductive science. The truth of preconceived theories has been practically tested by the observations and analysis of facts; and new principles have been gradually discovered and established by the same means. It therefore becomes the duty of a government to apply all the means in its power in aid of statistics, not only for general information and the administration of the affairs of state, but also for the advancement of political science.

In the report of the third meeting of the British Association it is stated that, in addition to the five then existing sections, another, originating with some distinguished philosophers, had come into operation, the object of which was to promote *statistical* inquiries. The president, Professor Sedgwick, in justification of the addition of this sixth section, furthermore stated, that statistical inquiries may be made compatible with the objects of the British Association, "so far as they have to do with matters of fact, with mere abstractions, and with numerical results. Considered in that light they give what may be called the raw material to political economy and political philosophy; and by their help the lasting foundations of those sciences may be perhaps ultimately laid." In the following year this new section was referred to as the prelude to the establishment of a flourishing society (the Statistical Society), which acknowledges itself the offspring of the Association, and which promises, by a procedure similar to that introduced by the Association, to advance materially the greatly neglected subject of British statistics.

From the original prospectus of the Statistical Society, printed at the end of the report of the third meeting of the British Association, we extract the following :—

"The Statistical Society of London has been established (15 March, 1834) for the purposes of procuring, arranging, and publishing 'Facts calculated to illustrate the condition and prospects of society.'

"The Statistical Society will consider it to be the first and most essential rule of its conduct to exclude carefully all *opinions* from its transactions and publications,—to confine its attention rigorously to facts,—and, as far as it may be found possible, to facts which can be stated numerically and arranged in tables.

"The first operation of the Society will probably be to subdivide and organise its General Council in such a manner as may enable that Council to deal conveniently with all the subdivisions of the subject-matter before it. Those subdivisions will necessarily be numerous.

"The whole subject was considered by the statistical section of the British Association at Cambridge, as admitting a division into four great classes :—

"1. Economical Statistics.
"2. Political Statistics.
"3. Medical Statistics.
"4. Moral and Intellectual Statistics.

"*Economical Statistics* comprehend, 1st, the statistics of the natural productions and the agriculture of nations; 2ndly, of manufactures; 3rdly, of commerce and currency; 4thly, of the distribution of wealth, or all facts relating to rent, wages, profits, &c.

"*Political Statistics* furnish three subdivisions : 1st, the facts relating to the elements of political institutions, the number of

electors, jurors, &c.; 2ndly, legal statistics; 3rdly, the statistics of finance and of national expenditure, and of civil and military establishments.

"*Medical Statistics*, strictly so called, will require at least two subdivisions; and the great subject of population, although it might be classed elsewhere, yet touches medical statistics on so many points, that it would be placed most conveniently, perhaps, in this division, and would constitute a third subdivision.

"*Moral and Intellectual Statistics* comprehend, 1st, the statistics of literature; 2ndly, of education; 3rdly, of religious instruction and ecclesiastical institutions; 4thly, of crime. Although fourteen subdivisions have now been enumerated, it is probable that more will be required."

According to this restricted and stringent programme, to reason upon the facts presented, or to draw conclusions from them, is not within the province of statistics; but is the business of the statesman and of the political economist. And, in order still further to exemplify the precise character and limits of statistics, the emblem chosen for the Statistical Society consisted of a wheat-sheaf, with the motto "aliis exterendum." The statistical drudge was absolutely required to stifle his opinions; and to content himself with binding up his sheaves of wheat for others to thrash out!

It is satisfactory to know that, in the interests of science, these absurd restrictions have been necessarily disregarded in the numerous valuable papers that have appeared in the series of volumes of the Journal since issued by the Society. The statist usually sets out his results in numerical tables, because facts, especially when they exist in large numbers, are most compactly and clearly conveyed in tabular statements; and because he is not satisfied with giving deductions which may admit of question, but supplies the materials which every one may himself examine and compare. It is not true that statistics consist merely of columns of figures; it is required that all conclusions shall be fairly drawn from well-attested data, and shall be capable of mathematical demonstration. One of the principal objects of the statist is to ascertain the actual condition of his country and the causes of that condition, with a view to discover also the methods of improving it. The actual condition of the country is by no means obvious to the superficial observer, and the causes of the various phenomena which it exhibits lie very deep, and can only be elicited with the aid of extensive investigations conducted with skill and judgment as well as with mathematical exactitude. The statistics of education, of crime, of pauperism, of labour, of health, of trade, of agriculture, of manufactures, and of every one of the details which enter into the survey of our national condition and prospects are closely connected one with another. At the same time, not only do they admit of being studied separately, but more true progress will be made by such a method of study. In these inquiries the statist should know what information is wanted, and how he will look

for it, before he commences his examination of a mass of figures; his mind should be unbiassed by any preconceived opinions and ready to receive the suggestions which the study is sure to produce. He should be ready at once to abandon any hypothesis as soon as he finds it to be untenable, and to subject his materials to new tests as occasion arises. It will also be of great advantage that other minds should be brought into contact with his own, and that he should profit by the suggestions which their independent inquiries cannot fail to elicit. Statistics of population should have his special attention, as it is closely connected with so many other subjects.

Population is the statistical element of greatest importance: it relates, above all, to the people, and a just appreciation of their welfare and their requirements. It would be vain to attempt to form social statistics of value without having as a basis the results of a periodical census executed with every necessary precaution, and with all the accuracy which is so indispensable. Other data have no real value, except so far as they relate to the numbers of the population. The classification according to age supplies the means of establishing useful tables of population, of forming correct views on mortality, on the efficient resources at the disposal of the State in case of necessity, and of fixing the ratio between the useful portion which actively contributes to the general well-being and the weaker portion which yet requires assistance and support to become in its turn useful. The classification by professions, trade, and occupation, indicates the means by which the population provides for its subsistence, and allows the legislator more particularly to concentrate his attention on the separate details of the complicated machine confided to his care. The classifications by civil condition, by education, by origin, &c., furnish the administration with no less valuable information to assure internal good order, and to facilitate the execution of the laws. In fact, all questions which are connected with population deserve the greatest possible attention on the part of the Government.

Medical statistics are closely connected with the subject of population, and present the greatest difficulties to scientific investigation. The progress of medical science is necessarily slow and uncertain, for this reason, that the phenomena observed owe their origin to causes that are innumerable, and that, consequently, they seldom admit of being compared one with another. If there were a rigorous identity in all constitutions, then one disease followed by a cure, and well observed, would be sufficient to obtain a similar success every time that the same disease was reproduced in other individuals. But this perfect identity cannot reasonably be supposed to exist; and if it were absolutely requisite to foresee all the cases which could be presented, so as to collect sufficient observations to verify all possible combinations, we should despair of ever arriving at anything satisfactory. Looking, however, at the broader lines of distinction, there does not really exist a very formidable number of essen-

tially different cases, although the causes which influence one disease are in general both numerous and susceptible of variation. It is therefore only necessary to distinguish the more prominent causes which show a very decided individual influence, and to ascertain from a sufficient number of observations the degree of energy which belongs to each. In medical statistics relating to public health, in consequence of larger numbers, the facts are, in the aggregate, less complicated, and therefore more easily susceptible of a statistical analysis.

In the prosecution of medical science there are two distinct departments which may be conveniently separated. The successful cure of the patient depends on a compound event, viz. :—1, That the doctor shall discover the nature of the disease ; 2, That he shall know the mode of treatment to be adopted. The former of these inquiries should have the precedence; diagnostics should always precede therapeutics. Investigation should first be directed to questions of diagnostics, or the distinguishing of symptoms. Such symptoms being given, what is the probability that the patient is affected by one malady rather than another ? What is the probability of its duration, of its intermittence, and of its passing into a chronic state when it is abandoned to the operation of nature only ? These questions, amongst others of equal importance, being once resolved, would constitute the surest basis for the study of the influence of medicine. In all these, as in other inquiries, the student should inform himself by observation, collect and analyse well-recorded facts, and render them as comparable as possible before seeking to discuss them with a view of deducing their relations, and methodically proceeding to the appreciation of causes.

The sciences of observation have for their object the study of the natural bodies by which we are surrounded and of the laws connected with them. They all proceed in a similar manner, and the same rules are generally applicable to them. In all of them it is equally found necessary to commence by collecting well-observed facts and classifying them systematically, so as to convey the required information. It is in weighing and appreciating the value and relative importance of the facts that science properly begins. The causes which might have produced them are sought, their mode of action and their degree of energy studied, and an attempt is made to proceed from a knowledge of the past to a knowledge of what is to come. All sciences of observation at their commencement have undergone the same phases; they were formerly arts, for they were in the first stages necessarily limited to grouping, in a more or less successful manner, collections of observations and facts belonging to a particular order of things ; and it is by the comparison and discussion of these facts that they afterwards became elevated to the rank of integral departments of science. If the subject of statistics presents itself in a similar manner and passes through the same phases, its future is not doubtful to those who can comprehend the sciences of observation in a philosophical point of view.

It should be remembered as a matter of general utility in the preparation and discussion of statistical tables, that material verifications, by means of differences, should extend to the columns of figures, as to the continuity of their progression. This object is singularly facilitated by the use of diagrams. A simple line enables us to appreciate at a glance a succession of numbers which the most subtle mind would find it difficult to retain and compare. The facility we thus have of at once perceiving a series of results, and of recognizing the peculiarities of their progression is such that we may at the same time follow another set of results, and judge by the common inflexion of the lines the ratios existing between the elements under comparison, and the common causes which may modify them simultaneously. Graphical representations cannot be too highly recommended when it is required to check series of numbers influenced by common causes, and to take a general view of the modes of action of such causes.

It has already been stated, at the commencement of this paper, that the scientific principles of statistics, properly considered, enter somewhat extensively into the calculus of probabilities. An account of this important connexion, exhibiting some of the higher mathematical applications, will perhaps comprise the most interesting and most scientific part of the subject now under consideration. Before entering upon this account it may be found useful to premise a short statement of the fundamental principles of the mathematical theory.

PROBABILITY is a numerical fraction expressing the value of the degree of presumption in favour of the occurrence of a particular event, when the causes or conditions which influence the result are partly known and partly indeterminate. The word chance has a similar signification, and is more commonly used when the operating causes are so far unknown that there is almost a total absence of information, or data, to guide the mind to any settled conclusion, and when the individual result is not expected to approximate to any general average. In common phraseology the word chance means that we do not perceive any reason why the event should happen one way rather than another.

Every event is the result of some antecedent cause or combition of causes. A full knowledge of all the attending conditions and circumstances would be sufficient to determine the event. When, however, the several influences which combine in the production or non-production of an event are only partly known and partly indeterminate, the event is in such case indeterminate or contingent; it may or may not happen, so far as our limited knowledge extends, and the probability of its happening, or the presumption in favour of its occurrence, is to be ascertained by an accurate examination of the particular result under every possible combination of the indeterminate conditions.

In the theory of probabilities it must always be understood that the causes of events are considered only in reference to the

number of chances they afford for the occurrence of those events which they may possibly, but do not necessarily, produce.

The simplest case of probability is that in which the event can happen in a certain number of ways, and may fail in another given number of ways, and in which the circumstances are such, that amongst these several ways all are equally likely to happen. The probability of the occurrence of the event is in such case accurately measured by the fraction of which the numerator is the number of possible ways in which the event can happen, and the denominator the total number of ways. That is—

$$\text{Probability of event} = \frac{\text{Number of ways it can happen.}}{\text{Total number of ways.}}$$

In the application of this rule it should be carefully remembered that the implied condition that the several ways are equally likely to happen is absolutely essential to its accuracy. For this it will be sufficient that no reason exists why one way should happen rather than another. Mistakes have frequently been fallen into through want of attention to this necessary condition.

We shall proceed with a few numerical examples on this and some other most important cases. It will be understood by the reader that the limits of this article will not admit of giving the mathematical investigation of the principles, but the several relations will always be distinctly stated and an example worked out at length.

CASE I.—Suppose that a bag contains 3 white balls and 5 black balls, and determine the probability of drawing therefrom a white ball in a single trial.

Here each of the 3 white balls may possibly be the ball withdrawn, which gives 3 ways in which the event can happen; whereas the total number of ways is 8, there being one for every separate ball, and it is obvious that each of these ways is equally likely. Therefore the required probability of drawing a white ball is $\frac{3}{8}$; and similarly the probability of drawing a black ball is $\frac{5}{8}$.

The true signification of these results may be thus interpreted. If a large number of similar trials be made, a white ball may be expected, on an average, to be drawn at the rate of 3 times in every 8 trials; and a black ball at the rate of 5 times in every 8 trials.

The sum of the two probabilities is $\frac{3}{8} + \frac{5}{8} = 1$, and this must evidently represent the aggregate probability of drawing *either* a white or a black ball; and as this total event is always certain of fulfilment, it follows that in evaluating probabilities *unity* always represents *certainty*, and is the highest order of probability.

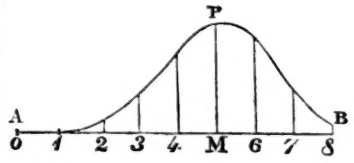
The foregoing case is perfectly analogous and in all respects equivalent to the following. A regular octahedron has 3 of its triangular faces of a white colour and the 5 remaining faces are black. If it be thrown indiscriminately, the probability that the uppermost face shall be white is $\frac{3}{8}$, and the probability that it shall be black is $\frac{5}{8}$.

Case II.—A regular octahedron has 3 white triangular faces and the 5 remaining faces are black. It is required to find the respective values of the probabilities that in 8 throws a black face shall be presented uppermost 0, 1, 2, ... 8 times.

Adopt the fixed notation $a = 3$, $\beta = 5$; then if $p = \frac{a}{a+\beta}$, $q = \frac{\beta}{a+\beta}$ denote the initial probabilities of white and black for a single trial, the required probabilities will be the values of the respective terms of the expansion of the binomial $(p+q)^{a+\beta}$, viz. : $p^8 + 8p^7q + 28p^6q^2 + 56p^5q^3 + 70p^4q^4 + 56p^3q^5 + 28p^2q^6 + 8pq^7 + q^8$, and the indices of p and q in each term indicate the respective numbers of white and black faces. Hence, employing the above values of p and q, viz., $\frac{3}{8}$ and $\frac{5}{8}$, we thus obtain, to four places,

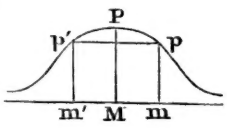
Probability of	8	white and	0	black.	·0004
,,	7	,,	1	,,	·0052
,,	6	,,	2	,,	·0304
,,	5	,,	3	,,	·1014
,,	4	,,	4	,,	·2112
,,	3	,,	5	,,	·2816
,,	2	,,	6	,,	·2347
,,	1	,,	7	,,	·1118
,,	0	,,	8	,,	·0233
					1·0000

By way of illustrating the particular distribution of the several events the values of the respective probabilities are laid off on equidistant ordinates in the annexed diagram, and a continuous curve line is traced through the resulting points. This curve is remarkably regular in its form when we consider the smallness of the numbers that enter into the calculation. It is at once perceived that it exhibits the chief peculiarities of the species of curve which represents the facility of error; with which it, in fact, becomes identical when large numbers enter, and we make $a = \beta$ in order to equalize the probabilities of positive and negative errors. The most probable event, viz., 3 white and 5 black, which appertains to the maximum ordinate PM, is that which theoretically presents the true average of an indefinite number of trials, and the segments of the abscissa measured from M, positively and negatively, represent the departures from the general average, and may be regarded as the errors in respect of the other events.



Errors of observation are of a similar description. A numerical result derived from observation must be expected to involve an error, the magnitude of which is dependent upon the character of the inquiry and the circumstances attending it Each value must be considered as probably greater or less than the truth : in the

former case it is said to be affected with a positive, in the latter with a negative error. By an error, it must be understood that we include only those accidental deviations of which no account can be given, except that they are found to exist. No variation is to be called an error which is more likely to be of one sign than the other. Errors beyond a certain magnitude should evidently be regarded and estimated as extremely improbable, and positive and negative errors should be regarded as equally probable. The curve which indicates the law of the facility of error must then be of the kind shown in the annexed diagram, where M represents the position of the mean or most probable value; M*m* a positive error: M*m*′ a negative error; and each ordinate of the curve exhibits the relative probability of the corresponding error. The probability of any accurately-defined value must be inappreciable, since it is only one out of an infinite number of possible cases; but the probability of the error falling between two stated values will be finite and will be properly represented by the curvilinear area comprised between the corresponding ordinates. As the error increases on either side of the mean value the probability or facility appertaining to the error must obviously diminish rapidly in magnitude, which circumstance is indicated at each extremity by the asymptotic approach of the curve towards the line of abscissæ. If x denote M*m*, the magnitude of the error or variation from the most probable value, the standard law of facility in regard to large numbers is—



$$y = \sqrt{\frac{c}{\pi}}\, e^{-cx^2} = Ye^{-cx^2}$$

where y denotes the ordinate pm, and Y the maximum ordinate PM. The indeterminateness of the constant c will allow of an adjustment of the law, with a considerable degree of nearness, to any law which may be presented; and its assumption will, in fact, give a near mathematical approximation to any other law, and the more nearly, the greater the number of observations.

The constant c is called the modulus of the law of facility, and its value determines the general amplitude of the variations from the mean value. As a general rule, the range or amplitude of divergency varies inversely, and the general persistency of the results varies directly, as the square root of the modulus of facility. The average divergence is $\frac{1}{\sqrt{\pi c}}$.

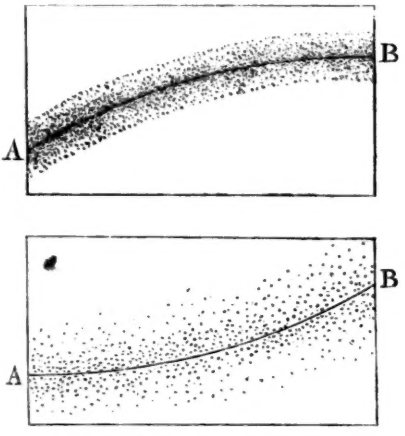
On account of the last-mentioned properties the modulus of facility of error (c) is also technically called the *weight* of the observations. For a given set of individual observations its numerical value may be determined as being equal to one-half the reciprocal of the average amongst the squares of the several estimated errors. The probable error of a single observation is

found by dividing ·4769 by $\sqrt{c}$; and the probable error of the mean of n observations is found by dividing ·4769 by $\sqrt{nc}$.

The mathematical theory of errors of observation is especially applicable to statistical tables which exhibit masses of observed facts properly classified, and, when the observations are numerous, there is a similar law of facility with respect to the variations of the individual facts from the mean values. In either case the deviations from the mean values are due to casual and indiscriminate circumstances which indifferently augment or diminish the several values; it being presumed that all disturbing conditions, which would have any assignable influence upon the results, have been duly eliminated in forming the tables.

A useful practical test of the reliance that should be placed in an aggregate table may sometimes be obtained by dividing the whole of the values observed into two or more portions, and ascertaining the relative proportions existing amongst the separate items, and noting how much they differ one from the other.

The importance of these considerations will be clearly appreciated on an inspection of the accompanying diagrams. The masses of points, in each, are supposed to represent a number of separate observations, and the central line AB is supposed to represent the average result after they are collected in mass and embodied in a statistical table. It is obvious that the former table will have more signification and will possess much greater value than the latter in consequence of the important circumstance that less divergency exists and greater persistency prevails amongst the separate observations, which generally range in the vicinity of the mean values. This fact, however, is obliterated from the tables when they exhibit the totals only.



Besides defects of this kind, there are other faults in statistical methods of inquiry, which it may useful to notice, viz. :—

1. Attributing results to conditions or causes which are only partially or defectively stated.

2. Assuming certain elementary conditions to be independent and equally probable which are not so.

3. Comparing quantities which do not admit of satisfactory comparison, the same not having been observed under similar or corresponding circumstances.

4. Reasoning upon insufficient numbers, which cannot be free from the disturbing effects of accidental causes. It is, unfortunately, a too common failing to draw precise, formal, and confident deductions from a too limited number of observed facts.

It is almost needless to add that these and other imperfections will disappear when the fundamental principles are more generally understood and the science of statistics becomes more extensively investigated.

The use of the following table (page 16), showing the values of an important integral, will appear in the cases which now follow.

Case III.—In 6,000 throws with a die, what is the chance that the number of aces shall fall within the limits $1{,}000 \pm 50$; that is, shall lie between 950 and 1,050, both inclusive?

The particular event in which the numbers are proportional to the chances is the most probable result; and this is $\alpha = 1000$ $\beta = 5000$, where α denotes the number of throws which are aces, and β the number which are not aces. The proposed limits being $\alpha \pm x$, the formulæ for calculation are :—

$$c = \frac{\alpha + \beta}{2\alpha\beta}\,;\quad t = \left(x + \frac{1}{2}\right)\sqrt{c}\,;\quad \text{required probability} = \mathrm{P}_t,$$

this last value being taken out, with the argument t, from the table on page 16.

Five figure logarithms are convenient for these calculations; and, for the present case, the following is the work :—

$\alpha + \beta =$	6,000	log 3·77815
$2\alpha\beta =$	10,000,000	log 7·00000 sub.
		log c 6·77815
		log $\sqrt{c}$ 8·38907
$x + \frac{1}{2} =$	50·5	log 1·70329
$t =$	1·2370	log t 0·09236
P =	·9198, the required probability.	

The chance therefore exceeds 9 to 1 in favour of the aces falling within the limits mentioned.

The following interesting example is given by Laplace :—

Example 2.—Supposing 18 boys are born to 17 girls, in which case out of 14,000 births the most likely individual result is, that 7,200 should be boys, and 6,800 girls; what is the probability that the number of boys shall fall between $7{,}200 \pm 163$ inclusive?

Calculation.

$\alpha + \beta$	14000	log 4·14613
$2\alpha\beta$	97920000	log 7·99087 sub.
		log c 6·15526
		log $\sqrt{c}$ 8·07763
$x + \frac{1}{2} =$	163·5	log 2·21352
$t =$	1·9550	log t 0·29115
P =	·9943	

The odds are therefore nearly 175 to 1 in favour of the event.

Table of Values of $P = \frac{2}{\sqrt{\pi}} \int_0^t e^{-t^2} dt$.

t	P	diff.	t	P	diff.	t	P	diff.	t	P	diff.
·00	·0000	113	·64	·6346	74	1·28	·9297	22	1·92	·9934	3
·01	·0113	113	·65	·6420	74	1·29	·9319	21	1·93	·9937	2
·02	·0226	112	·66	·6494	72	1·30	·9340	21	1·94	·9939	3
·03	·0338	113	·67	·6566	72	1·31	·9361	20	1·95	·9942	2
·04	·0451	113	·68	·6638	70	1·32	·9381	19	1·96	·9944	3
·05	·0564	112	·69	·6708	70	1·33	·9400	19	1·97	·9947	2
·06	·0676	113	·70	·6778	69	1·34	·9419	19	1·98	·9949	2
·07	·0789	112	·71	·6847	67	1·35	·9438	18	1·99	·9951	2
·08	·0901	112	·72	·6914	67	1·36	·9456	17	2·00	·9953	2
·09	·1013	112	·73	·6981	66	1·37	·9473	17	2·01	·9955	2
·10	·1125	111	·74	·7047	65	1·38	·9490	17	2·02	·9957	2
·11	·1236	112	·75	·7112	63	1·39	·9507	16	2·03	·9959	2
·12	·1348	111	·76	·7175	63	1·40	·9523	16	2·04	·9961	2
·13	·1459	110	·77	·7238	62	1·41	·9539	15	2·05	·9963	1
·14	·1569	111	·78	·7300	61	1·42	·9554	15	2·06	·9964	2
·15	·1680	110	·79	·7361	60	1·43	·9569	14	2·07	·9966	1
·16	·1790	110	·80	·7421	59	1·44	·9583	14	2·08	·9967	2
·17	·1900	109	·81	·7480	58	1·45	·9597	14	2·09	·9969	1
·18	·2009	109	·82	·7538	57	1·46	·9611	13	2·10	·9970	2
·19	·2118	109	·83	·7595	56	1·47	·9624	13	2·11	·9972	1
·20	·2227	108	·84	·7651	56	1·48	·9637	12	2·12	·9973	1
·21	·2335	108	·85	·7707	54	1·49	·9649	12	2·13	·9974	1
·22	·2443	107	·86	·7761	53	1·50	·9661	12	2·14	·9975	1
·23	·2550	107	·87	·7814	53	1·51	·9673	11	2·15	·9976	1
·24	·2657	106	·88	·7867	51	1·52	·9684	11	2·16	·9977	2
·25	·2763	106	·89	·7918	51	1·53	·9695	11	2·17	·9979	1
·26	·2869	105	·90	·7969	50	1·54	·9706	10	2·18	·9980	0
·27	·2974	105	·91	·8019	49	1·55	·9716	10	2·19	·9980	1
·28	·3079	104	·92	·8068	48	1·56	·9726	10	2·20	·9981	1
·29	·3183	103	·93	·8116	47	1·57	·9736	9	2·21	·9982	1
·30	·3286	103	·94	·8163	46	1·58	·9745	10	2·22	·9983	1
·31	·3389	102	·95	·8209	45	1·59	·9755	8	2·23	·9984	1
·32	·3491	102	·96	·8254	45	1·60	·9763	9	2·24	·9985	0
·33	·3593	101	·97	·8299	43	1·61	·9772	8	2·25	·9985	1
·34	·3694	100	·98	·8342	43	1·62	·9780	8	2·26	·9986	1
·35	·3794	99	·99	·8385	42	1·63	·9788	8	2·27	·9987	0
·36	·3893	99	1·00	·8427	41	1·64	·9796	8	2·28	·9987	1
·37	·3992	98	1·01	·8468	40	1·65	·9804	7	2·29	·9988	1
·38	·4090	97	1·02	·8508	40	1·66	·9811	7	2·30	·9989	0
·39	·4187	97	1·03	·8548	38	1·67	·9818	7	2·31	·9989	1
·40	·4284	96	1·04	·8586	38	1·68	·9825	7	2·32	·9990	0
·41	·4380	95	1·05	·8624	37	1·69	·9832	6	2·33	·9990	1
·42	·4475	94	1·06	·8661	37	1·70	·9838	6	2·34	·9991	0
·43	·4569	93	1·07	·8698	35	1·71	·9844	6	2·35	·9991	1
·44	·4662	93	1·08	·8733	35	1·72	·9850	6	2·36	·9992	0
·45	·4755	92	1·09	·8768	34	1·73	·9856	5	2·37	·9992	0
·46	·4847	90	1·10	·8802	33	1·74	·9861	6	2·38	·9992	1
·47	·4937	90	1·11	·8835	33	1·75	·9867	5	2·39	·9993	0
·48	·5027	90	1·12	·8868	32	1·76	·9872	5	2·40	·9993	0
·49	·5117	88	1·13	·8900	31	1·77	·9877	5	2·41	·9993	1
·50	·5205	87	1·14	·8931	30	1·78	·9882	4	2·42	·9994	0
·51	·5292	87	1·15	·8961	30	1·79	·9886	5	2·43	·9994	0
·52	·5379	86	1·16	·8991	29	1·80	·9891	4	2·44	·9994	1
·53	·5465	84	1·17	·9020	28	1·81	·9895	4	2·45	·9995	0
·54	·5549	84	1·18	·9048	28	1·82	·9899	4	2·46	·9995	0
·55	·5633	83	1·19	·9076	27	1·83	·9903	4	2·47	·9995	0
·56	·5716	82	1·20	·9103	27	1·84	·9907	4	2·48	·9995	1
·57	·5798	81	1·21	·9130	25	1·85	·9911	4	2·49	·9996	0
·58	·5879	80	1·22	·9155	26	1·86	·9915	3	2·50	·9996	0
·59	·5959	80	1·23	·9181	24	1·87	·9918	4	2·51	·9996	0
·60	·6039	78	1·24	·9205	24	1·88	·9922	3	2·52	·9996	1
·61	·6117	77	1·25	·9229	23	1·89	·9925	3	2·53	·9997	0
·62	·6194	76	1·26	·9252	23	1·90	·9928	3	2·54	·9997	0
·63	·6270	76	1·27	·9275	22	1·91	·9931	3	2·55	·9997	0

Case IV.—In 12,000 throws of a die, what are the respective chances?—1, that the number of aces shall be exactly 2,000; 2, that the number of aces shall fall within the limits 1,970 and 1,999; and 3, that the number shall fall within the limits 2,001 and 2,030, both inclusive in each case.

Here $a = 2000$, $\beta = 10000$, $x = 30$; and the formulæ for calculation are

$$c = \frac{a+\beta}{2a\beta};\ \mathrm{Y} = \sqrt{\frac{c}{\pi}};\ t = x\sqrt{c};\ y = \mathrm{Y}e^{-t^2};$$

1. Chance that the aces shall be a $= \mathrm{Y}$
2. Ditto with limits $a - x$ and $a - 1$ $= \frac{1}{2}\mathrm{P} - \frac{a}{a+\beta}(\mathrm{Y}-y)$
3. Ditto „ „ $a + 1$ „ $a + x$ $= \frac{1}{2}\mathrm{P} - \frac{\beta}{a+\beta}(\mathrm{Y}-y)$

where, as before, P is to be taken from the table on page 16.

Calculation.

$a+\beta$	12,000 log 4·07918	log $\sqrt{c}$	8·23856
$2a\beta$	40,000000 log 7·60206 sub.	$x = 30$	1·47712
	log c 6·47712	log t	9·71568
	log $\sqrt{c}$ 8·23856	2 log t	9·43136
	log $\sqrt{\pi}$ 0·24857 sub.	const.	9·63778 (log e^2)
	log Y 7·98999		log 9·06914
			0·11726 sub.
Prob. (1)	Y = ·0098	log Y	7·98999
	y = ·0075	log y	7·87273
	Y − y ·0023	t =	0·5196
		P =	·5376
	$\frac{1}{2}$ P ·2688	$\frac{1}{2}$ P	·2688
	$-\frac{1}{6}(\mathrm{Y}-y)$ − 4	$-\frac{5}{6}(\mathrm{Y}-y)$	− 19
	Prob. (2) = ·2684	Prob. (3) =	·2669

Collecting these results we have

1.	Probability of exactly	2000 aces	= ·0098
2.	„	1970....1999 aces	= ·2684
3.	„	2001....2030 aces	= ·2669
	Total, probability of	2000 ± 30 aces	= ·5451

The last mentioned total, if alone required, is more readily found by the method of Case III.

The foregoing cases serve to calculate the probabilities of specific events from a knowledge of the circumstances under which they are to happen or fail. These are direct questions of probability. In Case V, which follows, we enter on inverse questions of probability: from a knowledge of the event which has taken place it is required to find the probability which results therefrom with reference to a particular set of circumstances under which it might have happened. These calculations are founded upon the general principle that when an event may have happened in several different ways, that way which is most likely to bring about the event is the most likely to have been the cause.

CASE V.—Supposing that in 1,000 trials an event has occurred 600 times and failed 400 times, what is the probability that the true chance of the occurrence of the event in one trial is comprised within the limits $\frac{600 \pm 30}{1000}$ inclusive?

Here $a = 600$, $\beta = 400$, $x = 30$;

$c = \frac{a + \beta}{2a\beta}$; $t = x\sqrt{c}$; P_t = the required probability.

Calculation.

$a + \beta$ 1000,	log 3·00000
$2a\beta$ 480000,	log 5·68124 sub.
	log c 7·31876
	log $\sqrt{c}$ 8·65938
$x = 30$	log 1·47712
$t = 1{\cdot}3693$	log t 0·13650
P = ·9472	

If minute accuracy be required the result might be multiplied by $1 + \frac{c}{6} - \frac{13}{12(a+\beta)}$ giving ·9541 for the corrected probability. The odds are therefore more than 19 to 1 in favour of the proposed supposition.

The next case will enable us to judge of the probability of future events from those which are past, on the supposition that the circumstances under which the latter were produced continue in operation. This is essentially the very problem, above all others, that must be continually presented in the course of practical experience. It is mathematically discussed by referring the event to every possible cause, deducing the probability of each separate cause from the event, and then deducing the probability of the coming event from each of the possible causes, and finally determining the total probability by a process of summation.

CASE VI.—In 600 trials an event occurred 100 times and failed 500 times, what probability thence arises that in 6,000 more trials the number of occurrences of the event shall be contained within the limits 1,000 ± 50, inclusive?

Here put $a = 100$, $b = 500$; $\alpha = 1000$, $\beta = 5000$; $x = 50$. Then

$$c = \frac{a+\beta}{2a\beta} \cdot \frac{a}{a+\alpha}; \quad t = \left(x + \frac{1}{2}\right)\sqrt{c}; \quad \mathrm{P}_t = \text{probability.}$$

Calculation.

$a + \beta$	6000	log 3·77815
$2a\beta$	10,000000	log 7·00000 sub.
		6·77815
$\frac{a}{a+\alpha} = \frac{1}{11}$		log 8·95861
		log c 5·73676
		log $\sqrt{c}$ 7·86838
$x + \frac{1}{2} = 50{\cdot}5$		log 1·70329
$t = 0{\cdot}3730$		log t 9·57167
P = ·4031, the required probability.		

EXAMPLE 2.—In 6,000 trials an event occurred 1,000 times and failed 5,000 times, what is the probability thence to be inferred, that in 6,000 more trials the number of occurrences of the event shall fall within the limits 1,000 ± 50, inclusive?

$a + \beta$	6000	log 3·77815
$2a\beta$	10,000000	log 7·00000 sub.
		6·77815
$\frac{a}{a+\alpha} = \frac{1}{2}$		log 9·69897
		log c 6·47712
		log $\sqrt{c}$ 8·23856
$x + \frac{1}{2} = 50{\cdot}5$		log 1·70329
$t = 0{\cdot}8747$		log t 9·94185
P = ·7839		

(Compare these examples with that of Case III.)

The methods of computation shown in the foregoing cases must not be considered as limited to mere games of chance. They will apply generally to all kinds of statistical inquiries. Their capability of being directed to useful practical questions connected with business matters is elucidated in the following interesting and concluding example.

Example.—According to the Life Office returns, upon which the "New Experience" life tables are founded, out of 41,385 lives (male and female) age 41, there were 445 deaths, giving 40,940 survivors at the expiration of one year:—

1. Required the chance, deduced therefrom, that for age 41 the true probability of dying in one year is contained between the limits $\frac{445 \pm 30}{41,385}$, inclusive?

2. If another set of 41,385 lives be taken at the same age 41, what is the probability that the number of deaths in one year will fall within the limits 445 ± 30, inclusive?

3. Assuming the observed probability of dying in one year, viz.: $\frac{445}{41,538} = \frac{1}{93}$, to be the true rate for that year of age; what then would be the probability that out of another set of 41,385 lives aged 41, the deaths in one year would be contained within the limits 445 ± 30?

1. See Case V.

$a = 445$; $\beta = 40940$; $x = 30$.

$2a$	890	log 2·94939
β	40940	log 4·61215
$2a\beta$	....	log 7·56154 sub.
$a+\beta$	41385	log 4·61684
		log c 7·05530
		log $\sqrt{c}$ 8·52765
x	= 30	log 1·47712
t	= 1·0110	log t 0·00477
P	= ·8472	

2. See Case VI.

$a = a = 445$; $b = \beta = 40940$; $x = 30$.

$2a$	890	log 2·94939
β	40940	log 4·61215
		7·56154 sub.
$a+\beta$	41385	log 4·61684
		7·05530
$\frac{a}{a+a} = \frac{1}{2}$		log 9·69897
		log c 6·75427
		log $\sqrt{c}$ 8·37713
$x + \frac{1}{2}$	= 30·5	log 1·48430
t	= 0·7268	9·86143
P	= ·6960	

3. See CASE III.

$\alpha = 445$; $\beta = 40940$; $x = 30$.

2α	890	log 2·94939
β	40940	log 4·61215
		7·56154 sub.
$\alpha+\beta$	41385	log 4·61684
		log c 7·05530
		log $\sqrt{c}$ 8·52765
$x+\frac{1}{2}$	= 30·5	log 1·48430
t	= 1·0279	log t 0·01195
P	= ·8540	

The probability of No. 1 is nearly equal to that of No. 3, and would obviously be identical with the latter if the limits were only slightly extended to $\frac{445 \pm 30\frac{1}{2}}{41385}$. Thus we find that the formulæ of Cases III and V suggest the following interesting theorem.

THEOREM. If in $\alpha + \beta$ observations an event has been observed to happen α times and to fail β times, the probability that the true chance of the event lies between the limits $\frac{\alpha \pm (x + \frac{1}{2})}{\alpha + \beta}$ is equal to the probability that in $\alpha + \beta$ observations the number of occurrences of the event shall lie between the limits $\alpha \pm x$, assuming in the latter case that the true chance of the event is known to be $\frac{\alpha}{\alpha + \beta}$.

In the two cases involved in this theorem, the difference of $\frac{1}{2}$ in the values of x is deducible from the consideration that the ordinate (y) of the curve of facility of error may be regarded as practically representing the probability that an error shall fall within the limits $x \pm \frac{1}{2}$; and that the middle or maximum ordinate (Y) may similarly represent the probability of the error being comprised within the limits $\pm \frac{1}{2}$.

The principal questions appertaining to the collection, classification, and discussion of statistics are briefly comprehended in the foregoing cases. The practical resolution of these questions only requires a slight knowledge of logarithms of numbers, and is effected by simply following out the method of working exhibited in the various examples. In the several calculations it will be perceived that instead of using negative indices to logarithms, the complements to 10 are put down and used as positive indices, according to the convenient custom of experienced computers in the higher departments of mathematics; thus, in all additions, subtractions, &c., it is only requisite to reject and borrow 10 whenever necessary.

In almost every branch of statistical inquiry the quantities which enter are subject to deviations from the normal values, arising from a combination of innumerable minute circumstances, of which the variations due to each are separately very small. The total change from the mean value is of course produced by the superposition of these minute variations, some of which tend towards an excess and others towards a defect. When the number of observations is small, they are not unlikely to comprise a number of exceptional cases, in which the greater part of the variations repeatedly tend in the same direction, namely, all towards excess or all towards defect, thus producing divergent results in that particular direction; and these exceptional cases may comprise such a proportion of the total observations as to considerably affect the average result. But when the number of observations is large, the occurrence of such exceptional variations, in one direction only, becomes highly improbable, and the exceptions necessarily form such an inappreciable proportion of the total facts, that the disturbing effects become practically neutralized. Thus it is that, although but little dependence can be placed in deductions or conclusions drawn from small numbers, there will certainly be found to exist general laws amongst masses of phenomena, of whatever description, physical or moral, which in the invariable and perpetual recurrence of events of the same kind, as the numbers augment, necessarily approximate towards fixed and determinate ratios. It is also evident that every conclusion will have greater weight, and the approximation to normal results must be greatly assisted and expedited, when the more prominent circumstances which tangibly affect the observations admit of being wholly eliminated, or, still better, of being separately classified and tabulated.

In that case the phenomena appertaining to each set of circumstances or conditions would come under separate and distinct investigation, instead of the more complicated phenomena arising from their diversified combinations. If, however, the various conditions, which principally affect the quantities, do not admit of separation, there will be no alternative but to enlarge the number of observations, if such should be possible, until a reasonable presumption is shown that they present a sufficient accumulation of experience for the purpose of eliciting the required results with a very small probability of error.

As a concluding remark I may add that in this paper I have endeavoured, briefly and practically, to explain some of the most useful and important results and applications of the mathematical theory; and that I shall be glad if it should in any degree assist in directing more attention to the neglected logical science of statistics.

W. S. B. Woolhouse.

THE FINE ARTS AT THE INTERNATIONAL EXHIBITION.

It may afford matter for wholesome reflection to carry the memory back twenty years, and recall the feelings with which the Great Exhibition of 1851 was regarded. A collection of works of art and industry to which all the nations of the earth were invited to contribute, was such a startling novelty, that the idea almost turned the heads not merely of its most active promoters, but also of the general public. The newspapers of the period teemed with boastful anticipations. In presence of the amicable rivalry inaugurated by industry and commerce, war would speedily be viewed as a barbarous anachronism, and a millennium of universal peace and disarmament might shortly be expected to commence. It is scarcely necessary to say that hitherto these sanguine anticipations have been utterly falsified. The civilised world, instead of growing more pacific, has become far more warlike during the last twenty years, and though at the present moment there is a lull in the strife, the chief nations of Europe are watching each other's movements with ill concealed jealousy and suspicion. Yet the scheme which was originated in 1851 has not proved a barren failure. On the contrary it has thriven and multiplied so that the conception of international industrial displays which twenty years ago intoxicated the world with its novelty has now become perfectly common-place and familiar. Wherein then was the error of the men of 1851? Their error consisted in imagining that rivalry in arts and industry was necessarily incompatible with rivalry in arms. Melancholy experience has subsequently taught the world that nations though ready to trade with each other, are equally ready to fight.

The Exhibition of 1871 stands on a totally different footing to its predecessors. They were dazzling novelties, reappearing, like comets, only at distant intervals of time; whereas the series of exhibitions commenced this year, may, on the contrary, be compared to the rotation of a steady-going planet, since they are intended to perform a regular annual course. The trading element, moreover, which vulgarised the old Exhibitions and rendered their stalls too much like reproductions of Regent-street and Oxford-street shop windows, has been restrained within due limits by a rigorous system of classification and selection. Works are no longer displayed simply because Mr. X, or Mr. Y, chooses to send them, but because they are in themselves worth looking at, and form part of the Commissioners' prescribed series of subjects. Many persons feared that the absence of this obtusive element in the Exhibition would render it less attractive to the public at large. But the public have shown, by the ample patronage which they have extended, that they are quite as capable of appreciating a genuine exposition which appeals to their taste and their understanding, as of visiting a mere show

which principally excites wonder and curiosity. This public patronage has no doubt been stimulated by the opening of that wonderful structure, the Albert Hall, and by the completion of the railway system which renders South Kensington so accessible from all parts of the metropolis; but, on the other hand, the exciting events of the Franco-German war, followed by the terrible incidents of the civil conflict in Paris, tended considerably to indispose men's minds for the contemplation of industrial and artistic productions, besides crippling the display of the two foremost nations of continental Europe.

So many thousands of people have visited the Exhibition for themselves, and its contents have been so thoroughly and exhaustively discussed in the columns of the newspapers, that it would be unadvisable here to repeat an oft-told tale, which, moreover, in the limited space at command, would probably present the dry and repulsive character of a mere catalogue of names. It is proposed, therefore, to confine the scope of the present essay to the Fine Arts division of the Exhibition, under which are included Paintings in Oil and Water-colour, Mosaics, and Stained Glass, Sculpture, Furniture, and Metal Work, Engravings on Wood and Metal, Photography, Lithography, Architectural Designs, Tapestries, Carpets, Shawls, Lace, and Embroidery. In touching on these subjects respectively, our aim will be to discuss them broadly, and instead of dwelling too minutely on individual specimens, to search for results, and discover wherein improvement and progress are chiefly discernible. With this object in view free use will be made of the excellent Official Reports on the various sections of the Exhibition which have recently been published.

Attention is naturally first attracted to paintings in oil, concerning which Sir Coutts Lindsay has furnished a very instructive Report. In 1851 no pictures were admitted; but a comparison may be fitly instituted between the display of the present year and that of 1862. 1862 was in Europe a year of profound peace, and the paintings exhibited represented the art of an entire century. France produced the works of her most illustrious masters, from the period before as well as since the Revolution; Belgium, Holland, Germany, Italy, and Scandinavia were fairly, though less completely, represented; while the English gallery was graced with the productions of the fathers of our native schools of painting, as well as with those of their immediate descendants, and of their living successors; thus comprising three complete generations of painters. The scope of the Exhibition of 1871 was narrower, being intended chiefly to represent the labours of the last ten years, while, at the same time, the shadow of a terrible war brooded over Europe. Consequently. with the exception of Belgium, the continental galleries were either occupied by inferior works, or were not filled at all.

The British Art-Exhibition was large, extending over nearly as much space as that of all the foreigners put together; but it cannot be considered as a satisfactory representation of our con-

temporary painting. The number of pictures was considerable, and the average worthy of exhibition, but there were but few of the best works of our leading painters, and the collection was diluted with indifferent works more appropriate to the forthcoming yearly Exhibitions.

The small knot of masters who, during the latter half of the eighteenth century, gave existence to the modern school of English painting, were all of them self-taught men, and, though often cramped by an incompleteness in the technical knowledge of their profession, they possessed a marvellous originality of purpose and variety of resources. The influence of these men is still very great, and will probably never disappear: and the habit of self-education and self-guidance which they inculcated still continues to characterise English art. The rigid training of foreign schools, which produced a series of painters exhibiting in their works the familiar lineaments of their artistic ancestry, is unknown here, and, consequently, it is not possible to arrange English paintings in distinct classes, but, at the same time, a similar bias of mind has gathered many of our artists into certain groups. One of the most remarkable of these groups was that of the Pre-Raphaelites, who started into existence some years ago, inspired with an abhorrence of the conventional style which passed for art, and with an unbounded belief in the strict imitation of Nature. The leaders of this school have since receded from their more intolerant doctrines, but the main idea which they promulgated has leavened the whole of British art. Among other groups may be mentioned one which derives its distinctiveness from its intimacy with the ancient art-traditions of Greece and Italy. For a long time "high art," as it was called, was sneered at both by artists and by the public, nor did the genius of Haydon, marred as it was by serious defects, greatly benefit the cause which he advocated so passionately; but latterly such men as Mr. Watts, Mr. Armitage, and Mr. Herbert, holding Haydon's views, but advocating them with far greater patience and prudence, have obtained a considerable and ever-increasing influence. The genius of Wilkie, again, has formed a distinct group of painters; among them may be mentioned the names of Mulready, Frith, Leslie, and Faed. Lastly, attention should be directed to a knot of artists who have imported into their oil paintings many of the excellencies which had previously been considered the exclusive heritage of water-colours; such men, for example, as F. Walker, Marks, Burne Jones, and Leslie. Sir Edwin Landseer, who, in his delineations of the animal kingdom, may be said to have opened a new chapter in art, can scarcely be said to have founded a school, his followers are so few in number. This consummate master was very inadequately represented in the Exhibition by his "Highland Lassie," and "Van Amburgh;" nor was there in the collection any example of the works of the late Mr. Phillip, a masterly painter, but who, unfortunately, confined his delineations to a narrow range. The same criticism may be applied to Mr. Hook; whereas with

Mr. Millais, his range has broadened with experience, and his power strengthened with age.

The progress made by the British school of oil painting during the last decade appears principally remarkable for the growing influence of water-colour painters on oil painting, for the increasing influence of the Ideal School of Art, typified by Mr. Watts and Mr. Leighton, and for a disposition among painters to take a wider range in their subjects, which now include the production of ideal composition, of portrait and landscape painting, and also the study of the Sculptor's art. Close societies of painters, moreover, are giving up their exclusiveness, while the large galleries now opened to the public afford the great desideratum for art, namely, publicity in a fitting place for its appreciation.

Turning to the foreign pictures, the first impression received from the Belgian Gallery was the great average excellence (far above the ordinary English standard) of the works exhibited. A workmanlike completeness reigned throughout, every artist had approached near his intention. This power arises from an early training under approved masters chosen by the pupil himself, and carried out in company with fellow-pupils of a like bias.

The French Gallery had a very imposing class of pictures, brought together, under circumstances of great difficulty, with wonderful energy and success. Their exhibition included various works painted during the last half century by Isabey, Ingres, Scheffer, Delaroche, and others of a still older generation, besides many specimens of the present school. Most persons who visited the Exhibition were attracted by the genius of Regnault's "Execution in a Moor's Palace," though repelled by the revolting nature of the subject. Gerôme's picture affords a very faint idea of his merits, but he has been adequately represented this year in the Royal Academy. His cynicism leaves a painful impression on the mind of those most capable of appreciating him. His "Cleopatra," for example, and his "Ave Cæsar," are the conceptions of a man who despises and despairs of the state of society in which he lives. Two gems by Meissonier deserve a word of notice. As a miniature painter of subjects he has never been equalled, and his marvellous vivacity of colour, drawing, and expression, are not to be surpassed.

Mr. Samuel Redgrave observes that although some of the early Dutch painters in oil produced occasional works in water-colours, that department of art may justly claim to be peculiarly English. It originated during the latter half of the eighteenth century with the draughtsmen who were employed in perpetuating the ancient ecclesiastical edifices and mansions many of which were fast falling into decay. Their drawings were correctly described by the word "tinted," for being begun in Indian ink, or some greyish neutral colour, and thus finished so far as regards light and shade and form, some colour was added by a weak tint thinly washed in. The constant intercourse with nature, which was forced upon these men, soon pro-

duced greater excellence, and the school of water-colour artists arose whose works are now so highly prized by connoisseurs. It is sufficient to mention the names of Turner, Girtin, Thomas and Paul Sandby, Rooker, and Cozens. At first water-colour drawings were exhibited at the Royal Academy, but after a while (in 1804) these artists grew strong enough to establish a society of their own. Turner, being already an Academician, was not of the body, but it included such men as Glover, Pyne, John Chalon and Varley, who again were subsequently joined by De Wint, Copley Fielding, Cox, Robson, and Hunt. All these men won their fame by the simple use of transparent colours. With transparent colours Turner produced the most refined gradations of tint, and the most brilliant effects of light, and he declared that water-colour painting would lose all its individuality and beauty by the practice of mingling opaque and transparent colours. In spite of this dictum, water-colour painters have been led within the last few years to the use of body-colours, not for the principal lights only, or for foreground objects, but also for mid-distance and sky. Body colour gives, with little labour, the appearance of power and dash, with great command of light and shade, but it sacrifices the most esteemed characteristics of water-colour art. The fact is, that the art is in a state of transition, its painters are abandoning the ground on which many men established an enduring reputation, and are gradually exchanging the art of tinting on paper for the ancient system of tempera, in which gradations of body-colour cover the paper, which is treated merely as a canvas, its white surface no longer representing the quality of light shining under transparent washes of colour. And as at the same time several distinguished painters in oil, Messrs. Marks and F. Walker, for example, have been led to discard the use of oil in mixing their pigments, it is evident that the borderland between the two methods of art is less clearly defined than it used to be. Nearly 500 water-colour drawings of British origin were displayed in the recent Exhibition, while very few were furnished by continental artists.

The charming art of miniature painting, examples of which are now so highly prized, has, as is well known, been almost killed by photography. There were, however, two cases of miniatures at the Exhibition, which showed that their painters, if duly encouraged, could fully maintain the supremacy of their predecessors. This encouragement, however, is not likely to be afforded, and the miniature painter of the future must be content to work in conjunction with the photographer.

Turning to miscellaneous painting, the Report on which is furnished by Sir W. Digby Wyatt, we may observe that there were in the Exhibition several pretty illustrations of furniture decorated with painting, principally through the medium of coloured faïence plaques inserted as pictures in the sides of chests, sideboards, &c. Amongst them was conspicuous the large wooden coffer raised on legs, and enriched on its principal side by a capital reproduction in earthenware of Mr. Marks's clever "May-

day Procession." The painting of this was executed by female students at South Kensington, and the same hands painted in blue camaieu the figures of "The Months," designed by Mr. E. J. Poynter, A.R.A., for the grill-room of the Museum. Mention should also be made of a very pretty blackwood cabinet enriched with figures and ornaments sunk in sotto-relievo, and painted in red and white; of a piano in light wood stained to a satinwood tint, and covered with ornament boldly designed, and painted in monochrome in little more than outline; of a satinwood cabinet painted in quasi-imitation of the style of Old English satinwood which used to be prettily enriched with paintings after and by Bartolozzi, Angelica Kauffmann and others; and of a Japanese cabinet decorated with flowers, plants, and birds, all executed in the most brilliant colours by means of stained glass and straw mosaic.

The Exhibition also contained a number of china plaques intended for mounting on furniture. Among such may be named Mr. George Gray's "Maid and Magpie," Mr. John Simpson's "Village Choir," Mr. F. Lapf's "Judith with the Head of Holofernes," and M. Emile Lessore with his admirable groups of children, and studies from nature and the old masters.

Till recently Paris was the only place where a really artistic fan could be procured. But the Fan Exhibition at South Kensington showed that up to the close of the last century Italy, Spain, and England maintained a lively competition with France. This elegant art seems now likely to revive, and will afford an excellent opportunity for the ingenuity and dexterity of educated women. The highest prizes for the fans recently shown were awarded to three members of one family, the Misses Montalba.

England is assuredly the country for mosaic, says Mr. T. Gambier Parry. We need its durability and its lustre. Where other systems of Art would only make darkness darker, lustrous mosaic multiplies on its thousand surfaces every gleam of light, and reflects its own reflections. A great sensation was caused by the German invention of water-glass, but its success is doubtful, for two of the three works executed on this system, namely, Mr. Maclise's "Waterloo" and "Trafalgar," are already rapidly perishing. This is not to be wondered at if we call to mind that water-glass is but the delicate film which shines on the golden surface of our autumn straws of corn. When winter comes, water-glass and straw perish together. Mr. Minton Campbell's system of mosaic painting, on the contrary, combines the mechanism and durability of mosaic with the freedom of oil-painting. A surface of mosaic tesseræ of any extent may be painted as a man would paint canvas. The surface thus painted may be broken up into groups of tesseræ, and painting, which though treated like oil, is in fact vitreous, may be burnt in by the furnace, and rendered as imperishable as mosaic. Mr. Campbell's system was well illustrated by the figure of "Ghiberti," by Mr. Fisk, and a group of a Hunter, his Hawk, and Dog, by Mr. Marks.

The best foreign specimen of glass-painting was that by Von Swertskoff in the Pottery gallery. Its bold design is admirable for its purpose, which, instead of filling a window in a small room, and close to the eye, is rather that of giving splendour to a distant architectural effect. In entire contrast to this were Messrs. Heaton and Co.'s refined illustrations of "Elaine," in the Meyrick Gallery. With domestic glass, which this is, anything is allowable within the range of good taste.

Turning next to Mr. Westmacott's Report on Sculpture, we note that there are two propositions which should be carefully borne in mind when estimating Fine Art Sculpture. First, its function is to represent by *form;* and secondly, the forms chosen should be the best that can be found in the great school of Nature —Nature, that is, in her normal beauty and perfection, not as she is often, and indeed generally seen after the wear and tear of life, in what may be considered accidental deterioration or deviation from the first pure and perfect rule of creation. This was the standard adopted by the greatest masters of sculpture, when the art stood at its highest point of excellence. For this reason little improvement of public taste is to be expected from the contemplation of portrait-sculpture, which naturally reproduces personal peculiarities (often the reverse of beautiful), and which in these days must either drape the figure of a man in a fancy costume which he never really wore, or must else adopt the stiff ugliness of modern garments. It is worth observing that portrait-sculpture was not practised by the Greeks in the age of Phidias, when the art was at its greatest perfection, but arose in the days of Alexander the Great when it was beginning to decline.

British sculptors, as well as British painters, cannot, like their continental brethren, be classed under distinct divisions, and the reason is much the same in either case. Sculpture was even later than painting in taking root among us, and up to the end of the last century the art in this country was exclusively in the hands of foreigners.

The greater number of sculptured works in the late Exhibition were contributed by artists of Great Britain. They have nearly all been previously before the public, and have undergone public criticism; it is sufficient, therefore, to remark that they entitle their authors to hold an honourable place in the practice of their art. Italy contributed some works of very superior merit. Her statuary deserves notice for its truth and careful execution. There is always—as is the case with other continental schools—indication of sound and careful elementary training, a point in which English exhibitors are sometimes deficient. Belgium and Germany were well represented, nor did France, though late in the field, belie her ancient reputation.

Mr. Hungerford Pollen remarks, that in the matter of artistic furniture great improvements have taken place since 1851. Art in this branch had then sunk very low, for the excellent cabinet-makers of the last century had left no successors. The present improvement is due partly to the effect of the good designs and

careful workmanship of France, Italy, and other foreign countries, and partly to the research made both here and on the continent into the good designs of furniture-makers of the sixteenth and following centuries. Yet it must be confessed that the improvement has not penetrated very deeply into society, and also that, as in architecture, it seems impossible to produce anything that shall be original and yet artistic. All our artistic modern furniture is a mere reproduction of the designs of bygone masters. The specimens shown in the Exhibition, which ranged over every period, classic, mediæval, Renaissance, and the later centuries, can scarcely have failed to educate the eyes of some of the thousands who have examined them. Independently, however, of the slowness with which public taste is necessarily cultivated in a matter of this kind, there are two practical hindrances in the way. In the first place, for the great mass of house furnishers of moderate means, the artistic furniture is high-priced in comparison with ordinary vulgar upholstery ; and in the second place, modern English society is very nomadic in its habits. People who are always shifting from house to house and from city to city are apt to regard their tables and chairs rather as *impedimenta* than as cherished heir-looms.

Under the head of Metal Work, notice may first be taken of the various racing cups exhibited, of varying degrees of excellence, but in several showing ignorance of the true principles of art ; as for instance, where the ground is corroded into a rough green patine, to represent the grass on which deer are standing, or, worse still, when in a vessel composed of silver, bunches of grapes are represented by green and purple precious stones, and the leaves are enamelled green. Any baser metal would in this case have done just as well as the silver, which is wholly hidden by enamelling or gilding. The rage for novelty, which does so much to vulgarise British art, is probably responsible for this piece of misapplied labour.

A volume might be devoted to the specimens of Oriental metal work. The goldsmiths' and jewelled productions from India were of especial beauty ; minute in an extraordinary degree, examples of elaborate handwork not readily got where skilled labour, as with us, is rare and expensive. The enamels from Jeypore, however, where the gold is completely invested with enamel colours and encrusted with precious stones, err in the same direction as the Doncaster racing cup. Mention must also be made of the silver work, filagree, gilt, chased, or engraved ; of the Kooftgari work—iron or steel, inlaid with gold, from the Punjaub ; and of the wash utensils, goblets, &c., used in worship from Madras and Benares.

A very instructive and clearly written account of the various processes of Engraving, and of their progress, will be found in the official reports respectively issued by Mr. Julian Marshall and Mr. T. J. Gullick. It will suffice here to indicate some of the leading distinctions between the three principal branches of the art, namely, engraving on metal, etching, and engraving on

wood. In line engraving, the artist ploughs lines on the surface of a metal plate. After the design is completed, the plate is inked, and then wiped dry. On being submitted to the action of the press, the ink which lies in the furrows produces black lines on the paper, while the unengraved portions of the plate remain white. In mezzotint, which is another description of metal engraving, a plate is prepared in such a manner, that an impression from it would be entirely black; the engraver then scrapes off portions of the surface where he wishes to place the highest lights, and thus, without any decided outlines, obtains an effect of great softness and richness. In this case, the most prominent parts of the plate are those which retain the ink, while those which are sunk the deepest transfer the least colour to the paper. These two styles of engraving are now generally used in combination. In etching, a metal plate is covered with a varnished surface, on which the artist sketches his design with a sharp pointed tool. The plate is then exposed to the action of an acid which corrodes those parts scratched by the needle and therefore unprotected by the varnish. The lines are afterwards retouched and improved by the needle alone, without the aid of acid. The great advantage of etching is, that the artist can express his ideas direct, without the intervention of an engraver. As a material for engraving that shall be effective at small cost, wood possesses several advantages over metal surfaces. The box-wood used by engravers, though hard enough to resist pressure and bear minute subdivision, is much softer to cut than copper or steel. The dark parts of line engravings can only be obtained by a toilsome system of "hatching," whereas a wood-block in an untouched state yields a mass of black. But as large spaces of the wood are easily gouged out, breadth of light is equally at command. The logical deduction is, that breadth and vigour of light and shade should distinguish a wood-cut. Other advantages of wood engraving are, that as it is the prominent and not the sunken part which yields the impression, the blocks can be used as types, and wedged up in a chase in connection with letter-press: and also that, as large drawings are executed on several pieces of box-wood screwed together, these component pieces can be distributed to as many engravers as there are pieces. On the other hand, from the granulousness and comparative softness of wood, and from the nature of the cutting process and mode of printing, the lines of the wood engraver can never possess the sweetness and precision of those yielded by metal; and whenever (as is too often the case) a wood engraver attempts to give his cut the appearance of a copper or steel plate engraving, he sacrifices the peculiar advantages of his art. The early masters generally confined themselves to the simplest means, trusting to the expressiveness of their lines and the effective contrast of their light and shade.

After the publication of Holbein's "Dance of Death," than which nothing more simple and satisfactory in execution has appeared, the art of wood engraving declined throughout Europe,

and in England was employed for little more than cheap book and penny ballad illustrations, till revived about a century ago by Thomas Bewick. He may be regarded as the father of the present school of wood-engraving. Photography, though a valuable handmaid to wood-engraving, if cautiously used, is not likely to prove a dangerous rival, so long as the process of printing from photographs remains comparatively slow and cumbrous. The Graphotype, however, may prove a more successful competitor. In this process, the artist draws on a block of compressed chalk with a chemical ink, which hardens the chalk wherever it touches it. The interstices between the lines are then brushed away, leaving the drawing in relief. The whole surface is then chemically hardened, and a mould taken, from which an electrotype block is obtained. Like etching, this process possesses the great advantage of preserving the designer's original handiwork.

Contemporary wood-engraving was but slenderly represented in this Exhibition. Of some of its principal phases there were no examples whatever. We cannot compare the style of the engravings from Mulready with those from Millais. Neither the incomparable Leech, nor any of the principal living designers from "Punch" were represented. None of the illustrations to the "Cornhill Magazine" by various able draughtsmen were shown, and there was only one Doré. The "Art Journal" and the "Illustrated London News" were only represented indirectly by a few works contributed by engravers. The latter journal might have furnished materials for an almost complete history of wood-engraving during the last five-and-twenty years.

Lieut.-Colonel Stuart Wortley, in his Report on Photography, observes that the display of photography in this year's Exhibition shows a marked advance on any previous International Exhibition in two important points: first, there is a more earnest seeking after art; and, secondly, several processes have been discovered for giving permanence to the photographic print, and for producing it with greater economy and simplicity. The manipulation of a photographic negative has hardly, for some years past, been capable of much improvement, but a wider range of subjects is now attempted, and they are handled in a more artistic fashion.

The new photographic processes may be conveniently divided into two classes, namely, those in which the printing is conducted by every print being taken direct from the negative, and those in which the negative is used to produce a matrix from which the prints are afterwards mechanically obtained. To the first of these classes belong the carbon prints, exhibited by the Autotype Fine Art Company. The foundation of this process lies in the fact, that a solution of gelatine, and one of the bichromates, is rendered insoluble by the action of light. A mixture of gelatine and bichromate of potash, or ammonia, together with a sufficiency of pigment to give the requisite colour to the finished print, is spread on a sheet of paper. This prepared paper, or

tissue, after being printed through an ordinary photographic negative, is soaked in cold water, and placed in contact with a support of paper, zinc, or glass. The support, with its gelatine picture attached, being next placed in hot water, the gelatine dissolves in exact proportion to the amount of light which has acted on it through the lights and shades of the negative, and so delicate is the action of light on the prepared tissue, that the half-tones between the lights and shadows of the picture are accurately rendered. The gelatine print then either remains on the support that was selected for it, or is re-transferred to another on which it is permanently to remain. Among the specimens of this process which especially attracted attention at the Exhibition, were some copies of drawings by the old masters, some architectural views, and copies of original oil-paintings. The Woodbury-type process, invented by Mr. W. B. Woodbury, belongs to the second division, and is also based on the peculiar property of gelatine above referred to. A mixture of gelatine and bichromate of potash combined with a little Indian-ink, is prepared in the form of a thin sheet, and when dry is exposed to the action of light through a negative. It is then taken from the negative, and attached to a plate of glass by means of a coating of india-rubber. This is placed in warm water until the solution of the gelatine, in all parts where the light has not acted, is complete. When dry, the gelatine sheet is removed from the glass, and the image is seen upon it in relief, the shadows being the thickest, and the lights the most attenuated. This gelatine relief is now placed in contact with a soft metal plate, the two plates are submitted to powerful pressure, and the details of the gelatine relief are thus impressed into the metal. Curiously enough, the gelatine film is none the worse for this rough treatment, and can be used again to impress other metal plates. The metal plate is then placed in a printing press, some ink composed of water-colour ground up in gelatine is poured on its centre, a piece of paper is laid on this, the press is closed, and after the lapse of about a minute the print will be found to have set. The prints are then soaked in a solution of alum, in order to render the gelatine completely insoluble, and are then dried and mounted as ordinary prints. It will be observed that in this process the gelatinous ink lies thickly in the hollows of the matrix, and thinly on the elevations, thus forming the lights and shadows. In Mr. Ernest Edwards' heliotype process, the prints are taken direct from the gelatine film, which is strengthened for that purpose with a little chrome alum. The process is as follows. A glass plate having been waxed to prevent adherence, the gelatine mixture is poured on it, so as to form a tolerably thick film. This film is removed, and exposed to light through a negative. It is then fastened to a metal plate, and after being soaked in water to remove the superfluous bichromate, is ready for the press. Several inkings are required, inks of various thicknesses being successively used, so as to do justice not only to the half-tones and lights, but to the deeper shadows ; but as

these inks may be of varying colours, the power of the manipulator is obviously increased by this apparent disadvantage. With reference to other recently discovered processes, the enamel process by Mr. Henderson, and the Dallastype, by Mr. J. W. Dallas, are both represented by good results, but in neither of these cases has the invention been so widely applied as to render details necessary.

In his interesting report on Architectural Designs, Mr. T. Roger Smith remarks that Architecture stands necessarily at a disadvantage in an Exhibition compared with painting or sculpture. In the case of the two latter arts the works themselves can be displayed, whereas an architect can only show designs of his building, and a design is only a representation of the architectural work as it looks from a single point of view. On the other hand it must be fairly admitted that architectural designs often look both more imposing and more attractive than the real buildings. This remark especially applies to contemplated improvements in great cities. The site in reality is frequently cooped up in narrow streets, hemmed in by mean houses, and defiled by dirt and coal smoke, whereas, in the hands of the architect's draughtsman all appears fresh, bright, and picturesque, with plenty of space to spare.

Mr. Smith begins by a rapid sketch of the history of European architecture. For a thousand years after the Christian era, nearly all European buildings were constructed after the Roman manner, which itself was based on the style wrought out by the Greeks for themselves. This architecture, broadly distinguished by the term Romanesque, was supplanted about the time of the Crusades by the Gothic, or Mediæval style, which lasted from the 12th to the end of the 15th century. Then came the revival of Greek and Roman literature, accompanied by a revival of Roman architecture under the name of Renaissance. In England at the beginning of the present century, after a long period of inartistic stagnation, a gallant, but only partially successful attempt was made to revive Greek architecture. Mediævalism, which Sir Walter Scott had made fashionable, presently led the way for a far more successful revival of Gothic architecture. The Gothic revival is still in full force, though it has not superseded the earlier Renaissance or Roman. Renaissance art has flourished more or less in every European country, but English practice has been chiefly influenced by the developments of this style in Italy and France. In Italy the Classic revival was carried out with much purity of taste and refinement of detail, while in France more variety has been introduced. France, like ourselves, has had a Greek and Gothic revival within the present century, but Greek art has there taken a stronger hold than Gothic, and the term *néo-grec* is sometimes applied to that powerful architectural school whose style, resulting from a fusion of revived Roman with revived Greek, was displayed in all the buildings of the later years of the reign of Napoleon III.

Our own architects can no longer be divided, as they might have been a few years ago, into Classicists and Gothicists. A fair statement of the actual position of English architecture would be that revived Greek is abandoned, but that Renaissance, largely tinctured by features borrowed from France, is widely practised; that Elizabethan art is freely employed in domestic work, but that the most energetic and living architecture is Gothic, based on earlier models (namely, those of the twelfth and thirteenth centuries,) than in Pugin's time. Here, as in kindred arts, we seem to have little or no original power, and can only show our taste by copying the brain-work of bygone masters. Possibly new wants, such as those caused by railway communication; new materials, such as iron and glass; old materials revived, such as terra-cotta and mosaic; may develop a new, and (Mr. Smith hopes) a noble style. In fact, a new style has been developed, and may be seen at most of our larger railway stations; it may be convenient, but it is decidedly utilitarian, and only too faithfully reflects the spirit of the era in which it originated. The truth is, that those past ages which developed original forms of art possessed a certain something, Faith, Simplicity, Self-abnegation,—it is a subtle quality, and may be called by a variety of names—which all our money and all our science cannot buy. Indeed, it takes flight from what we call civilisation, and prefers to dwell among semi-barbarous peoples. But though our architects have not been able to develop a new style, it must not be supposed that they have slavishly reproduced past forms. On the contrary, their search after novelty has been restless and incessant. Features drawn from the art of various countries, climates, and epochs, are often introduced into one and the same design: a practice wherein great artistic skill is needed to avoid discord. Often, too, novel features and modes of treatment, growing healthily and naturally out of the materials and circumstances of the day, have been successfully combined with old forms.

Among the designs exhibited were two interesting drawings of Westminster Palace as the design stood in 1843. All the details were to be strictly in conformity with the best English examples of the architecture of the period selected, and Sir C. Barry was assisted in his researches by Pugin. A comparison with any recent Gothic design by a good hand will show how rapidly architecture has moved since then.

These drawings are also interesting in showing some important divergences from the building as actually executed. A glance at Mr. Street's design for the new Law Courts bears out the truth of the assertion as to progress. The successful design for the Manchester Town Hall may be taken as a good example of the Gothic of the day; it possesses a great deal of continental character and many ornamental features. Attention may next be called to two works by Mr. E. M. Barry, R.A., viz., the Cannon-street Hotel, London, which is in an ornate Renaissance style, with the storeys distinctly marked, decorative chimneys and towers, and important roofs; and a design for the New

National Gallery in a robust manner of Italian Renaissance. The premises of the General Credit Company in Lothbury reproduce with accuracy and spirit a Venetian building in London streets; a business house in Throgmorton Street possesses many features drawn from Italian Gothic, while a gabled city warehouse shows a French Gothic character. These are encouraging signs, and may, it is to be hoped, penetrate lower down, but the vulgarity and flimsiness which characterise a large portion of our street architecture is due not so much to the want of competent architects as to the vicious leasehold system which throws the bulk of our city building operations into the hands of ignorant and needy men. Next, as specimens of metropolitan improvements, may be ranked together St. Thomas's Hospital, the London Orphan Asylum, Columbia Market, the Metropolitan Meat Market, and the Holborn Viaduct. Turning to the provinces, it is refreshing to see that the dull dignity which is supposed to befit a bank has been broken at Altrincham, where a building of the half-timbered English domestic work, of which fine examples exist in that locality, is to be erected. Mr. Waterhouse's design for the Manchester Assize Courts should not be passed over, for these courts, which were erected a few years ago, and are very extensive and conspicuous, have had much influence in fixing public taste in the North of England. The same architect exhibited a view of the Natural History Museum to be built at South Kensington. The design is in a round arched style approaching Gothic, and is well adapted on account of the small blocks which can be used in its construction for execution in brick and terra-cotta. Altogether this work is one of the most hopeful and encouraging designs exhibited, as it hints at an architecture of the future, based on the features of the past, and yet not bound slavishly to repeat its traditions. The Liverpool Exchange (Renaissance) is worth noticing for its exceptional style, English municipal buildings being generally Gothic. This anti-Gothic taste, which obtains at Liverpool, is probably due to the existence of St. George's Hall, the foremost classic building of England. The designs for the Royal Albert Hall and the Albert Memorial naturally commanded much attention. On the former building the sagacious disposition of plan and vigorous treatment which mark the architecture of ancient Rome has been most successfully combined with the constructive audacity of the present day. The roof, the new use of old materials, the perpendicular tiers of boxes, and the artificial lighting are all modern; while the elliptical form, the sloping ranges of seats, the numerous inlets and outlets, and spacious corridors, and the ample velarium are ancient. The combination has produced effects more brilliant and striking than any other interior in England, perhaps in Europe, can offer, and entirely beyond what was possible to the architects of classic times. Any attempt to estimate the Albert Memorial in its present incomplete state would be premature. Church architecture was but sparingly represented in the Exhibition, many of the leading names being

absent, but there were a good many interesting specimens of domestic work, among others Crewe Hall, a fine Elizabethan mansion recently restored by Mr. E. M. Barry after a disastrous fire. Continental architects were very inadequately represented, but it is to be hoped that this defect will hereafter be remedied.

There are certain fabrics, says Mr. J. Hungerford Pollen in his report on Tapestries, Carpets, and Shawls, which may be classed both as manufactures and as works of fine art. Regarding the number produced, and the mechanical processes by which they are made, they are manufactures; but as each of them possesses a distinct artistic design, they belong to the province of fine art: such are tapestries, carpets, and shawls. Tapestry was introduced into Europe from the East, and is said to have been unknown in Rome till the King of Pergamus, about 130 B.C., bequeathed his goods to that city. Under the Empire, tapestry became a kind of furniture by no means uncommon, and extraordinary accounts of the pictorial tapestries that were made in Rome are to be read in the poets. In the middle ages of Europe, when roads were bad, and furniture scarce and of a portable character, tapestry was of the utmost use. By putting up these hangings, the bare and comfortless walls of a feudal castle could in an hour or two be rendered fit for habitation. Many splendid remains of tapestry, made and kept for churches, to be hung up on festival days, are preserved in France. The great seat of the manufacture of woven tapestry was Arras, whence the name so often found in Shakspeare. The most renowned of modern tapestry is made in Paris at the State factories of the Gobelins, which were established in the reign of Louis XIV. Le Brun, the painter, was the first director, and many of the earlier designs were from his pencil. At first, the factories were allowed to execute private orders, but latterly nothing has been made there except at the expense of the State; and the tapestries are either used for palaces or given as State presents. The work is finished with the completeness of painting, is exceedingly slow of execution—a workman being able to make in a year scarcely more than a square metre, or a trifle more than a square yard. For weaving the Gobelins tapestry, the loom is upright, and the warp threads are perpendicular. The weaver stands behind it, and has the exact picture or cartoon to work from. The cost of the tapestry amounts in some instances to 160*l.* the square metre. The dyes of the worsted are of extraordinary richness, and are very permanent, being quite fresh at the end of a century, and even when faded, there are methods of restoring their brilliancy, provided that the colours remain intact on the back, which is generally the case. Other well-known French tapestry factories are carried on at Aubusson and Beauvais. Tapestry was formerly made in England, at Mortlake, and on the site of Soho-square, but the factories ceased to work at the beginning of the last century.

Carpets are probably the oldest manufactures of a textile nature in the whole world. The Babylonians, Ninevites, and Egyptians

hung thrones and state seats with them, and those of classic Greece and Rome were covered with textures of this kind made of richly-dyed wool. In the middle ages the Crusaders brought carpets back from the East, but till comparatively recent years they were used rather as table or seat-covers than for walking upon, the floors of houses being generally strewn with rushes. In portraits of the worthies and beauties of Elizabeth's court, Turkey carpets or rugs are constantly painted as table-covers in the background. Oriental carpets may be divided into three classes, the Turkish, Persian, and Indian. Very fine carpets are made in Algeria, but the quantity is small, and they are not often brought to England. The Turkey carpets are exported from Smyrna, and most of them are made at Oujak in the province of Aidin. They are worked by hand, each tuft of wool being knitted on the thread of the warp with the small wooden needles or shuttles containing the material of the pattern. The designs of the large carpets are rude and simple, and descend from a remote antiquity. There is generally a great central pattern disposed diamond-wise; large masses, similar to the centre, in the four corners; while the intervening space is starred or spotted with a simple pattern. The Turks represent no living animals, and two or three foils or leaves are the nearest resemblance to a flower. These large carpets, however, are always rich and harmonious in colour. The Persians, a sect of Mahomedans whose creed permits the designing of living creatures, show in their art a more vivid appreciation of nature, and a more refined and varied system of colouring than the Turks. The pattern of their carpets is more broken than the Turkish, and evenly distributed, so as to give an effect of blending all the colours together. Deep blue, pink, and apple green are predominant, the ground being generally dark blue. White, which is rarely seen in old-fashioned Turkey carpets, is freely used in small lines of separation between the colours. Most of the Persian carpets imported are small, and are used as hearth-rugs. They are largely imitated in France; but, though the designs are copied from Oriental patterns, the effect is dull and heavy when compared with the genuine rugs. By far the most beautiful and characteristic carpets exhibited this year were those from Masulipatam and other parts of India. The colours used are a full red, broken by flowers or conventional leaves in which orange predominates, a cool low blue, a green of similar gravity of hue, and a soft creamy white. Latterly English and French dealers have had changes, more or less important, introduced into these oriental designs, to suit the bad taste of their customers. This is much to be regretted. Oriental designers have an instinctive faculty for beautiful colouring, and that which we term civilisation tends to impair that faculty. Of European nations, those most old-fashioned, least changed from the rude ages of the past, retain the greatest enjoyment and feeling of colour. English carpets began to be established as a home manufacture in the last century. In 1750 a premium was given by the Society of Arts for the best imitation of Turkey

carpets, and soon after factories of Brussels and other carpet fabrics were established at Paddington. It is satisfactory to observe that although our dealers try to sap the simplicity of the Orientals, yet that oriental taste is creeping into our modern carpet designs. Many of these originate with Mr. Owen Jones, whose admiration and advocacy of oriental decoration have had so wide an influence.

The most celebrated of the shawls of India are produced in Cashmere. This fertile valley, close under the spurs of the Himalayas, produces the finest wool from the Thibet goat, and its fineness and softness of fibre retains colours of the most intense and delicate hue. The designs of all Cashmere shawls are very similar, and consist of combinations of a certain pear-shaped form, representing a conventional tree. The borders are made of little panels, under a sort of Arab cusped arch and of the brightest colours. Each seems made in one of the rude looms of the country, and darned to its neighbour. These beautiful fabrics are produced at great cost of time and labour, numbers of hands being required to complete a single shawl. The French merchants lately sent out a designer to the Rajah, but the changes he has effected are decidedly not improvements.

Besides these exquisite productions of the Valley of Cashmere we have from India woven tissues, some embroidered and some the work of the loom only, of a splendour unknown to our European weavers. The gold and white, gold and purple, and white and silver muslins must be ranked for colour, taste, and delicacy of arrangement, among the artistic triumphs of the Indian loom. Some in the Indian Court were of a gossamer transparency. They are used for the dresses of Indian princes and princesses. The splendours of Turkish costume, partly Syrian, partly Greek, and partly from the looms of Broussa, near Constantinople, are of the same kind, though instinctively less elegant than those of India. The European looms manufacture shawls in imitation of those of Cashmere, but not the magnificent fabrics just described. In 1784 the manufacture of these shawls was introduced into Norwich, fine Thibet wool being imported for the purpose. At first the looms were small, and the shawls woven in portions as in Cashmere, but gradually larger looms were used, and the whole shawl was made in them. The Paisley manufacture of these shawls was set up about the same time. After the Egyptian campaign oriental shawls were manufactured in France, with certain modifications of pattern not always happy. Levantine and Albanian scarfs are fine stripe combinations of red, yellow, green, and blue, some black or white, and bright and well arranged. All these patterns had an Eastern, probably a Damascene origin.

Some examples of piece-work, woven for furniture purposes and exhibited in the Royal Albert Hall, deserve notice. Such were the terry poplins for curtains, exhibited by Messrs. Fry, and Messrs. Pim Brothers of Dublin. The designs, which are delicate floral patterns, are in relief, obtained by means of the grain of the silk. Messrs. Clabburn and Co. exhibited a piece of figured

tapestry or shawl fabric, in which, in imitation of Indian gold inlay, flowers and figures of men and animals are disposed over a black ground, in a silk that shines like gold. The tapestry designs of Messrs. Gillow, such as we see in sacred pictures of the times of Dürer, are massive in texture, bold in design, and richly varied in a simple key of colour. Many of these materials show careful study of good mediæval design, and the effect of direct copy from, or adaptation of Indian patterns and colouring, in the case of shawls and carpets, shows the influence which the East may be expected hereafter to exercise on European textile fabrics.

Like other artistic productions, lace has participated in the revival of good taste which has characterised the last few years. One or two elaborate works have been written on the subject, and among the series of official reports which are being here considered, there is one of a very interesting character on Lace by Mrs. Henry Reeve. Mrs. Reeve begins by pointing out the artistic value of lace. It softens the harsh lines of dress and drapery, and produces those half-tints, those delicate lights and shades which charm the eye in the transition from the gorgeous colour of the velvet or satin robe to the soft flesh tints of the fair neck and throat. The Church of Rome has always used the fine arts to heighten the effect of her magnificent ceremonial, and lace was used in her services from a very early period. The lawn napkin which veiled the sacred elements, as well as the coverings and hangings of the altar table, were all adorned with lace, while in the dress of a cardinal the harsh contrast which would otherwise be presented by the white linen tunic worn over the scarlet robe is obviated by the use of this elegant ornament. A careful study of the collections of lace at the Hotel Cluny in Paris, and at the South Kensington Museum in London, has already done much towards a revival of a correct taste. Portraits also afford much information, for in almost all the historical or family pictures of the reigns of Mary, Elizabeth, and James I, there are specimens of lace so accurately painted that the pattern is ready for working. Some knights and dames seem to have had a special taste for the *point coupé*, now called Greek lace, but which is more accurately to be described as a geometrical design worked in apertures cut out of a piece of linen. Queen Elizabeth, as her portentous ruffs and sleeves bear witness, was very fond of this *point coupé*. A little lace-trimmed shirt of Charles I was exhibited at South Kensington, and deft indeed must have been the fingers which worked its ornamentation. The tailors' bills of Charles II show a nice taste and a fair expenditure in lace, especially of gold and silver. William of Orange knew the value of Flemish point, while Queen Anne's Alençon ruffles and head-gear are highly prized.

Owing to the improvement of taste caused by the collection of old lace at the Hotel Cluny, a very high degree of excellence in *point coupé* and in *point compté* has been already reached, while thousands of hands in the Vosges, as in Paris, have found employment in this art, and in its sister art of weaving both black

and white lace on the pillow. These lace fabrics, it may be remarked, do not try the eyes of the workers nearly so much as those which are made with very fine thread, as the points of Brussels and Alençon.

"The want of general culture in the customer," says Mr. Arthur Helps, "creates the inferiority of the thing purchased by him." Thus, with regard to lace, the customer should not only perceive a difference between good and bad, but should be able to point out defects of design, of execution, or of material. If the design consists of arabesques, the curves should flow on to their actual termination, and not become stunted or distorted because the designers selected a pattern too large for the space. In the case of flowers and foliage more must not be attempted than the nature of the material and the work admits of treating harmoniously. Purchasers should use a magnifying-glass, and count the number of threads in the square inch, and the number of twists given by the bobbins in each mesh, as manufacturers do in classifying fine cambrics and hollands. The material must always be flaxen thread, smoothly spun, evenly and firmly twisted; the size of the thread, of the stitch, of the needle, the weight and number of the bobbins and of the pins must be carefully adapted to the pattern, and to the style of the lace.

The specimens of lace sent in to the Exhibition of 1871 were neither numerous nor of varied kinds, but it is to be hoped that in future years many more such contributions may be received. The very high prices obtained by dealers in old lace (200 guineas for a flounce of Venice point) ought surely to stimulate effort. Why should not such a prize be as attainable in the 19th as in the 16th century? France and Belgium have the monopoly of the fabrics made with the finest thread, such as those of Alençon and Brussels. England is apparently satisfied with the bobbins of Devonshire and Buckinghamshire. After criticising the specimens sent by England, Ireland (the Irish have for this work a special talent which only needs further cultivation), France, and Belgium, Mrs. Reeve concludes by a few suggestions on the choice of lace. No woman of refined taste, she says, would use the same lace for trimming her dress and her dressing-table. While the bridal veil should be of the softest and lightest fabrics, such as Brussels or Honiton, the heavy Venice point must be used as a border, not as drapery, and the appropriate background is silk or velvet. Lastly, the purchaser should consider whether lace is to float or to fall, whether a deep border of distinct pattern is to be seen on the dress, or whether, arranged as fringe the lines of the pattern are lost.

In his Report on Embroidery, Canon Rock points out the manner in which that decorative art originated. The weavers of primitive days found that, at both ends of the warp, the threads thrown across it by the shuttle dropped down, and the ends of the warp itself became ravelled. To hinder this, each strand in the warp was knotted, and thus, as those ends soon came to be untwisted, they formed themselves into a fringe. In time the

threads of the fringe worked by the needle into various shapes, became a rude form of what is now called lace. At last so elaborate and elegant did such fringes become, that the working of them became a distinct article of industry. The earliest fringes were always made to consist of two, very often of several colours, which were set to follow each other in regular succession, so as to show the various colours of the different threads put into the weaving of the textile, and thus tell the story of their own origin. But now fringes are almost always of one single colour and quite unlike in colour and material to the textile from which they hang. Such a fringe, often ugly in itself and unseemly, is a kind of artistic falsehood, belying the real origin and purport of this adornment. During the greater portion of the 16th century the place of real lace was supplied in linen articles of personal dress with slight embroidery, wrought in coloured thread, black or blue. While the employment of lace-work has been to hem and border textiles, embroidery has laboured to spread them over with imagery of every kind. Although this country was in former times celebrated for its embroidery, the collection of English needlework in the International Exhibition was very scanty. Yet the storerooms of old country mansions abound with fine samples of the old English work, now miscalled Greek lace, and only last year a fine specimen of it was turned up in the parish chest of Hesset church, Suffolk, where it had lain hidden and forgotten for more than three hundred years. An attentive observer of our modern English embroideries, as displayed in the Exhibition, cannot help remarking that the designers of those examples needed more skill in drawing and more knowledge of botany. To succeed in any branch of decorative art it is as necessary to be able to draw, as it is, for all the usages of life, to know how to write. If such a capacity were more general, we should not have such excrescences in leaves and flowers as are often produced.

Mr. Redgrave, the Royal Academician, furnishes a very valuable Report on the Present State of Design, which summarises conveniently much that has been already advanced in the foregoing pages. Speaking of carpets, he observes that the utility of such works would suggest their being quiet and unobtrusive in their general decoration, even if rich and full of colour. All violent contrasts, either of form or colour, should be avoided, and pictorial imitation would seem the more out of place the more excellent it is, in a work intended to be trodden under foot. Flat treatment should be observed for that which covers the ground we tread upon. It is satisfactory to find that these principles have been extensively adopted in the manufactures recently exhibited. While most of the carpets are in good taste, there is hardly one which can be called absolutely vicious in design; indeed, in many the faults arise from too great subserviency to these laws, the want of piquancy, the want of contrast, and too subdued colour, rather than to the excess of any of these characteristics.

Pottery is not included by the Commissioners under the Fine Arts division, although much of it involves design, and is as much artistic manufacture as shawls or carpets; Mr. Redgrave's observations, therefore, on flooring and wall tiles, on domestic utensils, and on ornamental pottery may be all the more fitly introduced here. It is obvious that many of the laws which should govern designs for carpets are equally applicable to floor tiles. All forms which, either separately or by combination, give the appearance of inequality of surface, are even more objectionable when introduced into tiled floors than into carpets, from our sense of the greater rigidity and hardness of the material. Patterns that are extremely pronounced or strikingly contrasted are objectionable. The best taste seems to be to cover the general surface of the floor with tiles whose ground is of a simple colour, or, if of varied colours, they should be non-contrasting as to light and dark, so as to give repose. Much depends on the purpose to which the apartment is devoted. A large empty entrance hall calls for more pronounced treatment: aspect and use must determine whether the floor should be cool or warm in its colouring, light or dark in its tones. The decoration of these goods has greatly advanced both in fancy and variety, within the last few years. On walls, breadth and quiet must be more desirable even than in the decoration of floors. A strong expression of lines is always objectionable, horizontal lines make low rooms seem lower, strongly expressed diagonals are still more unpleasant.

Turning to architectural pottery, Mr. Redgrave observes that it is almost impossible to criticise these works except in connection with the structures of which they are to form a part, since their design is essentially but a detail of the whole idea of the architect, but he remarks that their ornamentation is, as a rule, redundant; the modeller, unless a true artist, being tempted by the pliancy of his material.

It is remarkable how persistent in different countries are the forms of domestic pottery utensils. In semi-civilised regions the household vessels of remote ages continue to be produced even to our own times. The fact is that in objects of domestic utility it is not easy to obtain novelty. There are but few simple solids of capacity, and we are restricted even in our use of these by considerations of convenience. However elegant, for example, the shape of a domestic jug may be, no one cares to use it unless it can be easily cleaned and comfortably carried. Useful pottery being thus confined within such narrow bounds, we may look with some tolerance on the occasional extravagancies displayed in the designing and decoration of ornamental pottery, where the artist can do pretty much as he pleases. In the case of objects of this class, it cannot be said that "Utility should be considered before ornamentation," for real utility they have none. They may take the form of vases, epergnes, candelabras, and fountains, but they are really merely decorative ornaments, and the more fantastic and rococo the work, the more some people admire it.

The old Palissy and majolica ware was intended, in the absence of silver or gold plate, to furnish the buffets of those days, and give sparkle and colour in the apartment, and similar advantages are probably conferred by our modern pottery ornaments. They serve to hold flowers and boudoir knick-knacks, they enrich the dinner table, they enliven a room otherwise dull and sombre. In any case, a vast amount of good art is expended on these objects, although sometimes, from want of judgment, much of it is employed to no beneficial purpose. For example, china and even faïence and stone-ware are so beautiful in their material, that it is a mistake to load the material by profuse decoration. When we make a piece of fine pottery look like gold, or enamel, or hardware, or papier-maché, we rob it of its natural beauty, and convert it into a sham. Take for example, the large vases exhibited by Prussia; if some of the natural surface of the material had been left undecorated, the contrast would have been agreeable, the colouring would have seemed richer, and the vases would have looked less like papier-maché. Again, two vases exhibited by Minton and Co., the one imitative of *cloisonnée* enamel, the other ornamented with bands of imitative damascened work, although great efforts of manufacturing skill, are examples of misapplied decoration, and cannot compete with the rich quality of surface of Chinese *cloisonnée*, or the inlays of India, Milan, Liège, or Spain. In the fine vases of the best time of Sèvres, the Bleu du Roi, the Rose du Barry, and other exquisite surface colours, rarely cover the whole object but leave the ground of the pâte exposed in various parts. This rule of not concealing the true material holds good also as to the gilding of china. Too much gold gives a heavy, clumsy look, and makes the china look like ormolu, whereas it should be so added as to be evidently an enrichment of the pottery. A proof that the material is far too beautiful to be concealed is afforded by the delight with which we look at china, either wholly white, or very simply decorated; at Nankin porcelain, for example, with its blue ornament, at Satsuma ware, or even our own fine stone ware. At the same time it should be clearly understood that the artistic mistake lies, not in applying colour to pottery, for this, as in the case of Wedgwood-ware, or French celadon, may be done with admirable results, but in the imitation of another material in porcelain or earthenware.

With regard to Furniture, a quotation may be fitly made from the Report of the Paris Exhibition of 1855. "The primary elements of style are constructive, and as construction necessarily implies a purpose, utility must have precedence of decoration." These rules were observed in very few of the costly pieces of furniture sent for exhibition in 1855. They were mostly designed as ornamental objects, their use being little regarded. Since then, a change has taken place; utility is no longer neglected, while simple mediæval styles have been revived. The works in the Exhibition of 1871 may be fairly divided into two classes: in the first of which, utility takes the lead; in the

second, ornament. Mr. Talbert's sideboard, exhibited by Gillow and Co., is a good example of the first class. The broad shelf for dishes, the smaller nooks for condiments, the upper shelf for silver plate, the cupboards, drawers, and recesses show it is meant for use ; yet its decorative details—boxwood panels, on which are carved groups of fish, flesh, and fowl, are very agreeable. As an example, on the other hand, of a sideboard, where use is subordinated to ornament, Mr. M. Rogers' walnut-wood sideboard may be taken, with its richly sculptured trophy, representing hunting and fishing. In former Exhibitions, this sideboard would have been thought modest and subdued in its decorative features, but it now stands as representative of the class of ornamental furniture, and enables us to compare the growth of a taste for simplicity of form, and constructive utility in such works.

The series of Official Reports is fitly terminated by Lieut. H. H. Cole's interesting essay on Reproductions. Collections of the works of art of different periods have been formed in almost every European capital. The nucleus of such museums is sometimes provided by the bequest of a collector of curiosities, sometimes by objects of antique pottery or metal work found in the town or its neighbourhood. In modern times, there is such a keen competition among connoisseurs for the artistic productions of former periods, that private collections are frequently, at the death of the proprietor, scattered in every direction, and in this manner, some of the most highly-prized specimens of former art become altogether lost to public view : and, under any circumstances, the museums of foreign countries cannot be visited without the expense and labour of travel. But although the originals of such works cannot be inspected by the home-staying student, they may be brought, as it were, to his own door, by the means of *fac-similes;* and during the Paris Exhibition of 1867, a systematic plan was devised, under the auspices of the Prince of Wales and the Princess Imperial of Germany, for a universal reproduction of works of art for the benefit of the museums of all countries. This Convention, which was signed by the chief Princes of Europe, suggests, that as every country possesses fine historical monuments of art of its own, which can easily be reproduced by casts, electrotypes, photographs, and other processes, without the slightest damage to the originals, each country shall form a Commission, and that these Commissions shall respectively correspond with one another, and send information of what reproductions each causes to be made, so that every country, if disposed, may take advantage of the labours of other nations at a moderate cost.

The Crystal Palace has made extensive use of reproductions in its varied courts representative of periods and styles of art, notably in the Egyptian and Alhambra courts, while in the Italian and English courts are several copies in plaster of famous sculptures and monuments. But the Crystal Palace is rather the resort of pleasure-seekers than of students ; there are attractions of a more popular character which throw these fine

art *fac-similes* into the shade, and they are rarely studied or appreciated properly. The Arundel Society, too, has done much towards promoting art knowledge by publishing copies, chiefly chromo-lithographic and photographic, of the works of ancient masters. Among these may be especially noted the copy of the triptych from the hospital of St. John at Bruges, a very minute painting by Memlinc.

The methods of reproduction may be divided into those which are purely mechanical, those which are partly mechanical and partly artistic, and those which are purely artistic, though the three divisions frequently run into each other, as, for instance, where the electrotypist imitates discoloured metals from Pompeii, or where, in a metal reproduction of a boxwood violin given by Queen Elizabeth to the Earl of Leicester, the colour of the original wood is precisely imitated.

Piece-moulding in clay is the simplest of all casting processes, but it has many inconveniences. The results have to undergo much scraping and touching up, in order to get rid of the seams produced by the junction of the various moulds, and in some cases it is considered desirable to leave the seams in the cast untouched. Gelatine is easier and quicker, more applicable to large objects, and demands little after-manipulation. The process is as follows:—The carved surface is thoroughly cleaned and covered with rolls of modelling clay, the outer surface of the clay is smoothed, and a plaster covering or wall built against it. The wall is then removed and the clay taken away; when the wall is replaced an interval of the exact thickness of the clay will exist, and into this interval is poured gelatine. After twelve hours the gelatine will have obtained the consistency of india-rubber, and may be peeled off the carved surface. The gelatine mould is then laid on the wall which supported it in the liquid state, and a plaster cast or *fac-simile* is made. Paper moulds are unsatisfactory, as they seldom produce clean and sharp casts, but gutta-percha is a convenient material for metal work. In making an electrotype from a plaster mould, the plaster is saturated with bees'-wax, and covered with a metallic powder, on which the copper will deposit itself.

The reproduction of mosaics, which may be regarded as an operation partly mechanical and partly artistic, is thus accomplished. Sheets of damped blotting-paper are applied to the mosaic to be copied, and, by dabbing these with a long-haired brush, the precise position of each tessera is obtained upon the blotting-paper; when dry, the artist paints upon the indication of the tesseræ the tints required, which he copies from the original mosaic. This coloured paper copy serves as a model for the mosaicist, who has but to place and fix his own tesseræ in accordance with the paper mould, and to exercise his judgment in the selection of the proper colours.

To the third section of reproductions, namely, those which depend solely on the artistic ability of the copyist, belong drawings from mosaic and copies of paintings. Among the latter are

the interesting series of early Christian works from the catacombs of Rome, dating from the second to the seventh centuries. One of them is remarkable as being the earliest known picture of the Crucifixion. The originals are rapidly perishing under the influence of time and damp.

In conclusion, Lieutenant Cole draws a noteworthy distinction between reproductions and counterfeits. Plaster casts can rarely be made to serve as counterfeits, and electrotypes can always be detected; it is, in fact, when the reproduction depends on artistic and manipulative skill in copying that there is danger of its being turned to account as a counterfeit. Moreover, reproductions of all kinds, by making would-be collectors more familiar with styles of art, as well as with fine standard works, have done much to dispel that ignorance upon which the professional counterfeiter was wont to foist his wares.

It must, then, be borne in mind that these International Exhibitions, with all their merits, do not, after all, present a precise image of the condition of art and industry in the various countries of the world, chiefly because some of the men who are strongest in their various departments do not care to exhibit their works. Mediocrity is always ready to rush in where established reputation hesitates to tread. Thus, for example, the picture galleries at South Kensington by no means set forth the actual condition of British pictorial art, simply because some of the best men were either altogether unrepresented there, or represented only by some of their less important works. Nevertheless, if this peculiarity be taken into consideration, a fair estimate of the state of art in England may be obtained. First, with regard to pictures. Considering that a century and a half ago there was scarcely a British-born painter of any reputation, our progress has been wonderful, nor is there any falling off during the last ten years. While the exaggerations of Pre-Raphaelitism have been discarded, the cardinal truths which the Pre-Raphaelite theory embodied have been accepted on all sides, and have sent men to the direct study of Nature who would formerly have been content with feeble conventionalities. We still lack the careful pupilage which prevails on the Continent, and which there preserves even mediocre artists from gross errors, but on the other hand there is a freshness and individuality about English painters which is seldom to be found in the traditional schools of the Continent. Turning to engraving, while steel engraving, like miniature painting, has been almost killed by photography, wood engraving has made marked progress. The demand for wood-cuts is so enormous that some of our best artists, who would otherwise make a reputation on canvas, confine themselves almost entirely to the humbler medium of box-wood. Rapid production, however, here, as in other departments, endangers the true interests of art. The impression from a wood block, hurriedly engraved in sections by a dozen different hands, cannot excite the same intellectual interest, however great the mechanical dexterity displayed, as the

slow and loving labour of a single master; while the system, now universally adopted, of printing from electrotypes, places yet another barrier between the spectator and the artist's original conception. In photography great progress has been made, not in the production of negatives, but in the power of obtaining permanent results, and of reproducing copies of standard paintings and engravings. With regard to other branches of art, such as those included under the heads of architecture, pottery, and household decoration, a great advance is discernible. Architects go further afield, and, no longer content with reproducing the best English art of former times, ransack all Europe for models. Moreover, iron, glass, and terra-cotta are playing an increasingly important part in their designs. They would probably prosecute their endeavours for urban embellishment more heartily if they could get rid of that pest which disfigures all great British cities, namely, coal-smoke. A highly-decorated building in Manchester, Leeds, or Sheffield, becomes in a few years a dingy ghost of its real self. In carpets and shawls the East has insensibly imbued us with some of its genuine taste, though we, on the other hand, are doing our worst to vulgarize the manufactures of India and Turkey by suggesting so-called improvements. In furniture there is a real advance. Slowly, let us hope surely, the tawdry vulgarities of the ordinary upholsterer are being discarded in favour of sound workmanship and real convenience. But in all household matters of decoration we are only learning the A B C of true art. We still disguise the grain of our common but nevertheless beautiful woods under coats of paint; we still hide away our hinges and locks, thereby rendering them feeble and inefficient, instead of imitating the mediæval workers, who displayed them boldly, and made them ornamental to boot. Altogether, however, there is a genuine artistic advance in England, and it is visible in a great many different directions. In the matter of street architecture, for example, people are no longer contented with the plain brown brick box, which formerly did duty for a tradesman's house. Our domestic implements of pottery are less ugly than they used to be, while the most careless observer cannot fail to remark that our women dress more tastefully. Formerly, when our lively neighbours across the Channel brought an Englishwoman on the stage, they mockingly arrayed her in discordant colours. The satire would scarcely sting us now, and though there is still much room for improvement, though *outré* vagaries of fashion, which would be shunned in France, are eagerly adopted here, still Art is winning a gradual victory. People who formerly felt pleased to tread on a staring flowery carpet, have now learnt that a less obtrusive design is far more refreshing to the eye. These improvements are due partly to increased intercourse with more artistic nations, partly to the efforts of a few persons of genuine taste and cultivation, but partly to the Exhibitions of recent years. The dullest visitors to the Exhibition of 1871, probably without being aware of it, carried away some valuable lessons in taste.

ARTHUR LOCKER.

THE PRESENT STATE OF MUSIC IN ENGLAND.

THERE was a time, and that probably within the memory of the youngest reader of this paper when Music was scarcely regarded as a subject worthy of intellectual study, when its performance in public was comparatively rare, when the higher forms of the art were unknown to the majority of the English nation, and when the oratorio chorus or the part song was seldom heard among the masses. Even twenty-five years ago such a description of the state of music in England could not fairly have been criticized as overdrawn. The Philharmonic Society was at work supplying orchestral concerts to the wealthy amateurs of the day, the Musical Union, under the direction of Mr. John Ella, had just commenced slowly but surely to gather together an aristocratic and exclusive party of lovers of chamber music, which till then had been almost uncultivated, the Sacred Harmonic Society was impregnating the middle classes with that taste for Handel's oratorios which in our own day has culminated in the monster festivals at the Crystal Palace, but, with these exceptions, there was little external evidence of any deeply rooted love for the art among the English people, still less of any desire to make it a branch of popular education. On this latter point it may be observed that the only really national school for the education of professional musicians, the Royal Academy of Music, had at that time been carrying on its useful work as well as its limited income would allow, for about twenty-three years, but otherwise there was no opportunity for the cultivation of native talent or the encouragement of genius. Music, in fact, was working its way against the tide, and those of its professors who regarded it from any higher point of view than as one among many other means of gaining a livelihood found it altogether uphill work. Royal encouragement was sparingly bestowed; even in 1840 Her Majesty declined to lend her patronage to a concert of English music which the leading native professors, disgusted at the undue preference shown to foreign composers and artists, proposed to give, as it were in self-defence; and although the Italian Opera was regarded with favour, it owed its good fortune more to fashion than to any real love of music. Of musical journals there were one or two in existence, but they received far from a satisfactory measure of support; and thus looking in every direction we have ample evidence that at the date to which we refer music was regarded as a luxury for the upper ten thousand, rather than as a noble means of recreation designed by the all-wise Creator to fulfil certain definite restorative functions in relation to the three-fold nature of man. Even in the church the art was as little cultivated as in the home circle or the concert-room. The cathedrals, it is true, preserved the traditional choral service, to a great extent, perhaps, because there were endowments for its performance, which could not by any casuistry be appropriated

without keeping up, in semblance at least, some compliance with the obvious requirements of the statutes; but in the ordinary parish churches of the land the music was, like the prevailing style of architecture, little calculated either to arrest the unspiritual or to elevate the religious. Nor can we feel any astonishment at such a condition of affairs. Music is essentially a modern art. Its history in the past is that of a noble spirit conscious of a high and holy mission, but tied down by surrounding influences, and a quarter of a century ago it had only gained a slight hold upon the affections of the general public. Mendelssohn, indeed, had come amongst us with his genial influence, and, with the energizing power which a bright social spirit always exercises, had kindled somewhat of enthusiasm for his oratorios and—for what he valued far above his own work—his art; but the fact still remained that music was the pursuit of the few, not of the many, and that its cultivation even as a branch of drawing-room æsthetics was very limited.

Now, happily, the scene is totally different. "Nous avons changé tout cela," as Molière says: and although critics, true to their nature, are still occupying their leisure moments by fighting over the well-worn question, whether the English are or are not a musical people, it requires but a very slight amount of observation to discover that an enormous stride has been taken in the right direction, and that, in a quarter of a century, progress has been more rapid than in the whole of the previous hundred years. The good time has been long in coming, but it has surely come, and looking at things as they are now and as they were, we have every reason—not indeed to "rest and be thankful"—but to take courage and go forward. The present moment is a critical one in our musical history. The results of systematic efforts to promote popular education in the other arts and sciences meet us on every side. Schools of design, with their drawing and painting classes, have been established in all our great centres of industry; prizes and scholarships are held out as encouragements to the students to advance from grade to grade in their patient pursuit of the ideal, their endeavour to bring down to the busy work-a-day world as much of the beautiful as it is permitted to man to grasp, thus giving a convincing proof of what can be done by centralization and united effort. And at this moment, when painting, sculpture, and architecture are well cared for, when the State lends them the aid of the public purse, and when private individuals freely advance money for the same purposes, there are not wanting signs that music which, as a writer in a recent number of the "Quarterly Review" well puts it, comes like "a good physician, a tender friend, a gentle minister of consolation, to all classes, sweeping clear the sky and showing the blue beyond, making grief bearable and loss tolerable," is at last receiving the attention it deserves. While, however, this is unquestionably the case, it must also be admitted that the present state of the art in England is a subject on which far too little thought is bestowed by the general public,

and we therefore propose to furnish a brief outline of the existing condition of our musical institutions, including our public entertainments in the opera-house, the theatre, and the concert-room; our worship music, as heard in the services of the church and the chapel; and lastly, of the present means open to the various classes of society of educating themselves, either in the executive branches of the art or in its theory and history. Having thus considered things of the past and of the present, we shall be in a position to throw out some few suggestions which may not be altogether useless at a time when the future of the art entirely depends on the action taken by those who, in its several departments, are bound by their position and their ability to lead the public in the right direction.

And first, taking the highest form of all tonal development, orchestral music, which in the symphonies of the great masters seems to have reached the very acme of perfection, we find that there are no less than three bodies of performers specially devoted to the presentation of these masterpieces, the sound-pictures of Haydn, Mozart, Beethoven, Mendelssohn, and Schumann. The following table shows the date of the foundation of each Society, and gives the number of performers according to the effective strength of the bands during the past season :—

	Founded.	No. of Performers.	Director.
Philharmonic Society	1813	83	Mr. W. G. Cusins
New Philharmonic Society	1852	..	Dr. Wylde
Crystal Palace Band (Saturdays) ..	1855	80	Mr. Manns
Ditto on ordinary days	..	40	

These are the only organized orchestras in the metropolis which can be said to devote themselves to the production of great classical works. Occasionally, of course, instrumental forces are gathered together for special performances in the programmes of which we find a symphony, but the bands directed respectively by Mr. Cusins, Dr. Wylde, and Mr. Manns alone give their attention as a rule to this school of composition. To these may be added the Wandering Minstrels, a body of amateur performers conducted by the Hon. Seymour Egerton, and the Amateur Orchestral Guild, an offshoot from the older society, conducted by Dr. Haking, both of which tread in the same steps as their professional brethren, and give concerts of considerable artistic interest in various parts of the United Kingdom. Ever since its foundation the Philharmonic Society has adhered to the original principle on which it was founded, and has presented the subscribers with two symphonies at each concert, while another feature worthy of note as regards its management is that its affairs are directed by a council elected annually from among the foremost members of the profession. In their more recent policy they have shown a wise determination to advance with the times, and

the removal from the Queen's Concert Rooms in Hanover Square, the time-honoured *locale* of the performances, to St. James's Hall, was an unquestionable act of wisdom, as the handsome but comparatively small room was not only frequently overcrowded, but, on account of its limited size, was ill adapted for the modern orchestra with its powerful percussion instruments. Another notable improvement has been made at the Society's concerts in the vocal music, which is now entrusted to artistes of the highest eminence, whereas in not a few cases in former years, the performance of the singers was altogether unworthy of association with the orchestral items in the programmes. During the past season the directors have been well employed in celebrating the centenary of Beethoven's birth, in commemoration of which a gold medal has been struck and presented to those ladies and gentlemen who have rendered valuable services to the Institution. Dr. Wylde's "New Philharmonic Society," although ostensibly a corporation is in reality an organization mainly dependent on and governed by its conductor, who deserves considerable credit for giving during the spring of each year very satisfactory performances of symphonies and other orchestral works, more especially of those of the later German School, even Liszt's intricate scores having been played through with an evident disposition to give the priest-composer the advantages of a fair hearing.

But while the Philharmonic Society is entitled to stand first among the musical institutions of London, and indeed, of England, and the New Philharmonic Society takes the second place, the real education of the public has been carried on in the Concert-room attached to the Crystal Palace at Sydenham, where the Winter Concerts have attained a world-wide celebrity. Here every Saturday afternoon rich feasts of classical music are provided, and the execution of the band, owing no less to the energy of the conductor than to the inestimable benefit of the daily performances, has become noted for its delicacy and precision. Although it is unquestionably true, as it is sometimes reproachfully asserted, that we have no orchestra consisting solely of native performers—and it is fairly open to question whether anything would be gained by such a combination—there is no amateur who does not refer with satisfaction to the "Sydenham Saturdays" not only as a proof that we can hold our own against foreign competitors, but as a sign that good music pays. When the Crystal Palace concerts were first commenced on the present model the effort was, we believe, purely tentative, and the financial success of the scheme, necessarily a matter of importance to a "Limited Liability Company," with shareholders to be satisfied, was regarded with no slight anxiety. The result, however, has exceeded even the most sanguine expectations, and although in some ways the promises of the original promoters of Sir Joseph Paxton's beautiful building have been forgotten, and amusement has become the chief attraction, there is no part of the undertaking which has reflected more credit upon the responsible officers, or has added more largely to the revenue than the

conduct of the musical arrangements. The programmes of the twenty-six concerts given from the autumn to the spring are invariably good, and their effect in the improvement of the public taste has been very considerable. It should be added that no slight credit for this satisfactory state of affairs is due to Mr. Grove, the accomplished manager and secretary, whose elaborate notes on the programmes have so materially aided the public in their enjoyment and appreciation.

Descending from the greater to the less, from the combination of large numbers of instruments to the chamber performances with a single instrument of its kind for each part, there are two institutions which call for prominent notice.

	Founded.	Director.
The Musical Union	1845	Mr. John Ella
The Monday Popular Concerts	1859	Mr. S. Arthur Chappell

Of these the Musical Union first claims our consideration. This eclectic association was established in 1845, by Mr. John Ella, then a violinist in the Italian Opera band, under whose direction it has year after year strengthened its hold upon the higher classes of society, and by maintaining a certain amount of exclusiveness in the rules for the admission of members, has doubtless succeeded far better than it would have done if the *cordon* had been removed. Two features have distinguished its concerts—vocal music has been entirely excluded from the programmes, except at the director's annual benefit, and the majority of the performers have been distinguished foreigners, many of whom would otherwise never have been heard in this country. The first of these practices has much to recommend it; but on the second it may be remarked that in a series of concerts which are so exclusively supported by the English it would be well if there were a more frequent representation of our native executants. While, however, Mr. Ella has thus successfully and consistently catered for the "upper ten,"—and owing to the cost of the subscription, and the hour at which the performances are given (three o'clock in the afternoon) none but those who have both time and money at their command, can enjoy his *matinées*—the taste of the middle classes for the most refined specimens of composition has not been neglected, and what has been done at Sydenham for orchestral music has been done for chamber music, with equally satisfactory results, at St. James's Hall, by Mr. Arthur Chappell. In the year 1859, the Monday Popular Concerts were established with a string quartet party, a pianist, and one or two vocalists to supply the programme, in which, from that day to this, the classical, as distinguished from the miscellaneous on the one hand, and the merely frivolous or sensational on the other, has held its sway, even the works of modern writers in the same school, not being admitted as frequently as their admirers could desire,

or, perhaps, as their merits really deserve. But while Mr. Chappell has thus adhered conscientiously to the standard which he formed for himself twelve years ago, it is pleasant to know that he has never had cause to regret the high aims and the artistic purity of his scheme. Week after week, and often twice a week —for the Saturday Popular Concerts are but an offshoot of the parent stem—audiences which fill every available seat are gathered together in St. James's Hall, and if the sight of a great orator holding spell-bound an immense auditory in the Senate or the church is impressive, far more noble is the scene here presented, when one man or woman, or a little party of executants solely devoting themselves to the unfolding of the great design of a master whom they all revere, keep wrapt in sympathetic silence a vast crowd of listeners eagerly drinking in the pure tones which, as it has been well said "enjoy the glorious disability of expressing a single vicious idea or of inspiring a single corrupt thought." Of the music heard at these concerts it would be superfluous to speak, but on the good old principle of *place aux dames* a line may fairly be given to record the obligations which lovers of pianoforte music owe to Mdme. Arabella Goddard, our native pianiste, for her zealous production of masterpiece after masterpiece, including not a few works by the minor classics which had been too long neglected, and were comparatively unknown until she played them in public. The great Hungarian violinist, Joachim, still deservedly holds the post of first violin at nearly all Mr. Chappell's concerts, and it must be admitted that by maintaining them with all their varied excellence the director has conferred a benefit on the country which anywhere else but in England would have received a direct public recognition. This, however, is perhaps still to come in a day when art will assert her rights, and when an order of merit will be established to reward those who have devoted themselves to the elevation of the minds of their fellow citizens.

Leaving purely instrumental music, and turning to that more popular class of composition where band and choir are united, the great choral bodies for which England has obtained a deservedly high reputation, call for detailed notice. The most important of these are :—

	Founded.	No. of Performers.	Conductor.
Sacred Harmonic Society	1832	700	Sir M. Costa
Mr. Leslie's Choir..	1854	220	Mr. H. Leslie
Handel Festival Band and Choir ..	1857	4,000	Sir M. Costa
National Choral Society	1860	700	Mr. G. W. Martin
Oratorio Concerts..	1867	350	Mr. J. Barnby

The history of the Sacred Harmonic Society forms one of the most interesting chapters in the progress of music in England. Established originally on a small scale, its course has been

steadily successful, and its oratorio performances, directed by Sir Michael Costa, are the finest to be heard in this country. At the same time it may be questioned whether the policy of the directors has not been too conservative, and whether the feeling of security which they enjoy from the knowledge that a repetition of the popular compositions of Handel and Mendelssohn always yields satisfactory pecuniary returns has not acted prejudicially, and hindered the production of new or unknown works. Of late, however, there have been signs of a disposition to move onwards in this respect, and it is to be hoped that during the ensuing season there will be a still further departure from the beaten track. Neither performers nor audiences are the better for a constant performance of the same music year after year, and while hard work is involved in the search for "fresh fields and pastures new," such enterprise always carries with it its own reward. Although we have included Mr. Henry Leslie's choir in the same category with the societies engaged in the performance of oratorios and masses, owing to the fact that it is frequently heard in works which have orchestral accompaniments, its specialty is the execution of the unaccompanied choral music of the best composers ancient and modern. Whether it is in one of Palestrina's ancient works, or in such motetts as those of Samuel Wesley; whether the programme be formed from the glee and madrigal of bye-gone days, or the modern part-song, with its delicate effects and brilliant tone colouring, the singing of the choir is alike superb, and nothing superior to it can be heard in this or any other country. The performers are a mixed body of professional and amateur singers, who neither pay a subscription nor receive any remuneration for their services. Excellence of voice, and regular attendance are the only conditions of entry, although the limited number of the choir renders the membership somewhat difficult of attainment, but even these restrictions would avail nothing without the firm discipline of the conductor who permits no deflection from his standard of perfection. The National Choral Society, which has now completed the tenth year of its existence, works on a different system, the members paying an annual subscription. Its choir ranks decidedly below the others we have mentioned, and although its performances in past years have been of a fairly satisfactory nature as regards the chorus, the orchestral arrangements have been decidedly defective. The well-known oratorios form the staple of the programmes. Mr. Barnby's choir, which has now ceded its distinctive title in favour of the name given to the performances directed by the conductor, viz., "The Oratorio Concerts," was formed in 1867. Mr. Barnby, who is as well known in the church as in the concert-room, the choral services at St. Andrew's, Wells-street, where he was for many years organist and choir-master, being deservedly celebrated, has in a short time obtained a striking success with his performances, although he is infinitely more at home as a choir-master than as *chef d'orchestre*. The new works which he has produced, and still more notably

the performance of Handel's *Jephtha*, Bach's *Passion-Music*, and Beethoven's Mass in D, have gained for him the hearty sympathy of the public who love music for its own sake, and it may truly be said that he deserves his reputation. While his proceedings have been characterized by boldness, he has spared no pains to secure a careful and conscientious execution of the grand works he has chosen, and the members of his choir have thus been compelled to submit to an amount of active drilling which is as highly creditable to them as it is to their conductor. During the ensuing season the concerts will be given at Exeter Hall, the choir being enlarged to 500 voices, and the orchestra strengthened in proportion. Of the Handel Festival Choir, which has this year sung at the triennial meeting at Sydenham, it is sufficient to say that it furnishes a direct evidence of the energy which has been displayed of late years in the matter of musical performance. Where such a vast body of singers is gathered together there must of necessity be some unevenness of execution and occasional marks of coarseness which frequent rehearsals alone can tone down, but when it is remembered that many of the most difficult choruses at these monster music meetings are sung without any previous combined rehearsal of the provincial and metropolitan contingents, and in some cases without any preliminary practice at all, it is a sufficient proof of the general improvement in sight-singing which has taken place throughout the country, an improvement due quite as much to the labours of the Tonic Sol Faists as to the exertions of those who still adhere to what is commonly termed the Old Notation. The same progress has been noticeable at the provincial festivals at Gloucester, Worcester, Hereford, Birmingham, and Norwich, which still maintain their interest by affording an opportunity for the production of new works by native and continental writers, many of the most important of the recent contributions to our stores of choral music, sacred and secular, having been given at these time-honoured festivals.

Of opera in England it must be admitted with regret that there is still but little prospect of the formation of a national school either of composers or performers. The ill-fated company directed by Miss Louisa Pyne and Mr. William Harrison served to bring forward music full of beauty by Balfe, Wallace, and other composers, but like the Royal English Opera Company which took its place, it failed from a lack of public support. Explain the anomaly how we may, the fact remains that English writers of the present day seem unable to compose operas of the "grand" type in sufficient number to supply a national Opera House with an attractive succession of novelties, and thus we find that nearly every undertaking established to supply such performances degenerates into a company for the presentation of Italian or French works of the lighter class in an English dress. Some minor works by Mr. Sullivan and other composers, partaking of the operetta, style and cast in a light and popular form, are meeting with greater acceptance, and it is from this source that we must look

for the ultimate rising of a school of native operatic composers, if such a desirable consummation is ever to be reached. Italian opera, on the other hand, always supported by the rank and fashion of society, and the only musical institution in England which receives unasked a fair share of Royal patronage, is still supplied at rival houses, the attempted coalition between Messrs. Gye and Mapleson having resulted in an ignominious failure from an artistic point of view. The great vice of the system in the present day is the practice of sacrificing everything to the demands of the chief artistes, who, when they once become popular favourites, receive salaries altogether out of proportion to the services they render. Such a practice must, even with the large resources of our operatic *entrepeneurs*, eventually involve them in bankruptcy, or lead to the neglect of the other accessories which are so important on the lyric stage, and during the past season there were proofs that the exorbitant charges of the *prima donna* necessitated a reduction of expenditure in other departments which told disadvantageously on the *ensemble*. Added to this, the undue preference shown to individual artistes leads them to overtax their powers by singing more frequently than they ought when they are in their prime, or else induces them to perform in public, as in the case of Madame Grisi and Signor Mario, when their efforts to overcome the loss of physical strength are as painful to the thoughtful among the audience as to the artistes themselves. Still more unsatisfactory is the encouragement given by the *habitués* of some of the West-end theatres to the performances of the lightest school of French operas, and the absolute favour shown to performers who in their way are even more offensive than the Music-hall singers who contribute so largely to the demoralisation of the lower classes of society. It is, we fear, only too true, as Mr. Tom Taylor asserts in his recent pamphlet on the Theatre in England, that the taste of the nation has deteriorated as far as the drama is concerned, and that the stage has fallen from the high estate which once gave it a claim to rank next to the pulpit as an agent in the inculcation of sound principles.; but we question whether, judging from the increasing popularity of Offenbach's operas, which are deemed comparatively flat by their admirers without a *soupçon* of indecency among the actors and actresses, the same charge may not be brought against the lyric stage. On the whole, however, we are inclined to agree with Mr. Taylor that the taste of the gallery and the pit is still sound, and that the loss of tone is found in the higher ranks, where the thinly veiled immoralities of the sensational novel and the lax habits of Belgravian society are unfortunately the fashion. Thus it is the duty of all who are interested in the progress of music in England to discourage the prevailing taste, not because the music in itself is baneful, but because by its very lack of depth it requires the eccentricities, as they are politely termed, of persons of the Schneider type, to draw an audience to listen to it. That peers and peeresses, and even princes and princesses, should, night after night, have crowded the theatre where such a pro-

gramme was provided is enough to prove that there is ground for apprehension, and the danger we have referred to is especially to be guarded against at a time when the love of the art is becoming so general. Fashion is always a powerful agent in moulding the public taste, and as lessees naturally prefer to produce what pays rather than to play Shakespeare or Mozart to empty houses, it is a point which cannot safely be neglected. Up to the present time, however, the chief operatic managers have remained proof against the temptation thus to lower their standard, and it is to be hoped that they will never be led to depart from it, for the history of opera as well as of every other branch of the art in this country emphatically proves that it is only the good and true which really stands the test of time.

Among the miscellaneous entertainments obtaining the largest amount of popularity are the so-called Ballad Concerts, the programmes of which serve to bring before the music-buying public the new drawing-room songs issued by the publishers who, as a rule, manage the performances. Out of them has grown the vicious "royalty" system, as it is termed, by which a public vocalist undertakes for a certain sum to sing a new ballad, often of the most worthless description, and thus to secure for it an assured sale of a large number of copies purchased by those who sing what their favourite songsters sing, without regard to the merits of the music or the character of the words. The latter are often of the most inane description, sufficient, in fact, to create a feeling of disgust if they were really listened to, but as in general they are merely sung amid the hum of after-dinner conversations, they may, perhaps, be excused on the ground that they possess the negative virtue, not altogether without its value in the present day, of being free from vice. Here and there among these compositions we find a song describing the home scenes which are so dear to the Englishman, and setting before him, like one of Faed's pictures, an episode of domestic life, which always possesses its own peculiar charm, but in too many cases they are utterly worthless, the words being at times even ungrammatical, and nearly always without continuity, and the music a mere succession of chords as meaningless as the tum-tum of the uneducated savage. Other concerts, however, among those provided by individual artistes or managers, possess far higher claims, and specially the recitals by Madame Arabella Goddard, Madame Schumann, and Mr. Charles Hallé. The programmes in these cases have a direct educational value, and performers on the pianoforte can adopt no better method of acquainting themselves with the resources of their favourite instrument, or of learning to appreciate the stores of music specially written for it, than by a regular attendance at these performances. Up to the present time a distinctive character has been imparted to the programmes of each of these eminent artistes: Mr. Charles Hallé choosing the works of the greatest masters, and generally devoting himself to one author during the season, as in his performance of Beethoven's sonatas; Madame Arabella Goddard illustrating the *Dii minores*,

and diving into the portfolios of Dussek, Clementi, and Cramer; while Madame Schumann has given us, in her own unequalled manner, a choice selection from the modern school and her husband's works in particular.

In glancing at the more immediate opportunities afforded for obtaining musical education it is natural that our thoughts should turn at once to the Universities, the great centres of training for those who are able, on the conclusion of school life, to carry on their studies to maturity. Here, however, we are doomed to disappointment. The university professorships of music, instead of providing education in the art only serve to test its progress, as the lectures given are of the most cursory description, and the real work of the occupant of the music chair lies in the examination for the degrees of bachelor and doctor of music which, unlike the degrees in arts, laws, or divinity, are granted on the passing of the necessary examinations without residence. The following table will show the date of the foundation of the professorships, with the names of the professors :—

Founded.	University.	Professor.
1626 ..	Oxford	Rev. Sir F. G. Ouseley, Bart.. M.A., Mus. Doc.
1684 ..	Cambridge	Sir W S. Bennett, M.A., D.C.L.
1764 ...	Dublin	R. P. Stewart, Mus. Doc.
1806 ..	Edinburgh	H. S. Oakeley, M.A., Oxon, Mus. Doc., Cantuar.
1581 ..	London (Gresham Coll.)	Henry Wylde, Mus. Doc.
1867 ..	Glasgow (Andersonian)	Colin Brown (lecturer).
1871 ...	London Institution ..	John Ella.

At the English Universities and at Dublin terminal lectures are delivered, but no systematic instruction is given either in the theory or practice of music, and the lectures are usually devoted to the historical branches of the subject. At Edinburgh the case is entirely reversed. No degrees are granted, and the Professor, Dr. Oakeley, devotes his time to the delivery of courses of lectures and to recitals on the organ, on which he is an able performer. As a further means of educating the students and the public who are admitted to the organ concerts the Professor adopts the very useful practice of interspersing the programmes with historical notes and critical remarks, thus enabling his audience to appreciate the varied beauties of the music. At the Andersonian University at Glasgow the lectureship founded by the munificence of a devoted amateur, Mr. William Euing, is doing a good work in the education of the townspeople, evening lectures being combined with graduated classes for elementary and advanced pupils ; in fact, as far as imparting instruction is concerned, the youngest of the universities is doing by far the most important work, and the success of the students at the Society of Arts' examination is a proof of the thorough character of the instruction they receive. It is, of course, perfectly true that the endowments of Oxford and Cambridge are insufficient to enable

a professor to reside during term, or to devote much time to his work, but this seems to us to be a conclusive argument in favour of an alteration in the present system, and we can scarcely believe that if a proposition were made in Convocation for the establishment of a musical lectureship there would be any difficulty in obtaining the needful sum from the University exchequer. That there would be ample work for a well-qualified man in the delivery of lectures and the conduct of choral classes cannot be doubted by any one who is acquainted with the undergraduates, among whom music is universally popular and extensively cultivated, even in the face of existing discouragements, in addition to which it is obvious that the provision of a complete system of instruction would materially add to the value of the degrees, the examinations for which might still be conducted by the professors and their present assistants.

At Dublin, the following are the musical arrangements in the University.

Degrees in music are granted under the Charter of Charles I, of which a part runs thus:—

"Ut studiosi in Eodem Collegio Sanctæ et individuæ Trinitatis Elizabethæ Reginæ *juxta Dublin*," (the city did not then reach to the College walls, which are now on all sides surrounded by it), "libertatem et facultatem habeant gradus tum Baccallaureatus—Magisterii, et Doctoratus, juxta tempus idoneum in omnibus artibus et facultatibus obtinerdi."

The University authorities have always liberally maintained the choral service, and kept a large organ in their chapel within the walls. In this chapel the most eminent of the musicians attached to the two cathedrals of Dublin—St. Patrick's and Christ Church—have also been engaged. Six choral scholarships were founded some years ago; students obtain them after an examination; they then assist in the chapel choir, and in consequence of doing so, have one-half their college fees remitted. The well-known madrigal writer, Thomas Bateson, who was organist and master of the children of Christ Church in 1618, is, upon the authority of Sir John Hawkins and of Dr. Rimbault, said to have been Mus. B. of the Dublin University; on the title of his second set of madrigals he is called "Organist and master of the boys of the cathedral of the Blessed Trinity (Christ Church) and Bachelor in Music, Dublin." From the imperfect state of the records it cannot be ascertained who was Professor of the Faculty of Music in the 17th century, or whether there was any occupant of the chair. It is believed that the degrees were conferred by the whole College in Comitia ('Commencements') assembled, and by diploma.

The earliest Professor of whom record is preserved, was the well-known Irish musician, the Earl of Mornington, who was appointed in July, 1764, and held the office for ten years, when he resigned. Degrees seem to have been afterwards conferred by diploma; the form called "the Grace of the house" being first sought for publicly; that is, the Proctor brought forward, before the whole

senate, the name of the candidate, and if none objected to it, the degree was granted in due course, a proceeding not unlike the publishing of the banns of marriage. Very recently, an unpopular or unsuitable person has been refused this "Grace of the house," and in consequence no degree was conferred upon him. It is by no means an idle form.

Musical lectures (open to the public) are given in the College Halls.

When the present Professor of Music was elected, in 1861, he determined not only that the examination for music should be *bonâ fide*, but also that all musical graduates should possess the preliminary education of gentlemen, and no one has since passed the examination who has not been thoroughly educated both as a gentleman and a musician. In no way can music more definitely assert her place than in putting forward men of fair general (no less than musical) information; yet this preliminary education is peculiar to the Dublin University.

Trinity College also possesses a Choral Society composed of students, or those who have been students of the University, founded in 1837, with the Provost and other college dignitaries for patrons, vice-presidents, &c. The weekly practices held within the College walls are conducted by Dr. Stewart, the Professor of Music, who also directs the orchestra at the public concerts, of which there were five given last year. The music consisted of such works as "Lauda Zion," (Mendelssohn); "Eli," (Sir M. Costa); "Mount of Olives," (Beethoven); "Die Zauberflote," (Mozart), &c. Of late years examinations for women have been established; lady-amateurs also assist the students at the rehearsals and concerts. Music, it will thus be seen, is practised with extreme assiduity within the University precincts.

We append a table of the fees now charged to students for the degrees in music at the three Universities :—

	Mus. Baccal.	Mus. Doc.
Oxford	£10	£20
Cambridge	From £4 4*s.* to £10	From £8 to £12
Dublin	£11 15*s.*	£22

To these sums, which vary slightly at the various colleges must be added some small fees payable on entrance.

At London and Durham there is no Musical Professor and no degrees in the faculty are granted, and in the case of the former University this is specially to be regretted. If a Music Chair could be founded, and the Royal Academy could be affiliated to the University, students might proceed from the training school to the Board of Examiners, and take their degrees on the system now adopted by the *alumni* of King's College. In the metropolis, the music lectures at Gresham College are delivered during the legal terms by Dr. Wylde, who receives an annual stipend of 100*l.*, but it is much to be wished that classes in music could be added to the

lectures, and that thus this old foundation might become of the same practical value to London that the Euing lectureship is to Glasgow. At the London Institution in Finsbury-square, the council, exercising the power conferred on them by Royal Charter, have established a musical professorship, to which during the past year Mr. John Ella, the director of the Musical Union, has been appointed. He will, we believe, commence his labours in the winter, and from the interest excited by his previous lectures there can be little doubt of the success of the scheme. Of schools for the education of professional musicians, there are two in the metropolis: the first and most important being the Royal Academy of Music, already referred to; and the second, a semi-private institution, entitled the London Academy of Music, conducted by Dr Wylde. The Royal Academy, which was established in 1822, and was incorporated by Royal Charter in 1830, receives the small annual subsidy of 500*l.* from the State by vote of the House of Commons, and thus it is largely dependent for its existence upon public subscriptions and the students' payments. It is in fact the nearest approach we possess to a national music school, but its revenues are so small that it cannot do the work which the professors are anxious to undertake, although it supplies gratuitous education in cases where the highest excellence and natural ability are manifested. The annual course of instruction is divided into three terms, the fees for which amount to 33 or 21 guineas in the senior or junior department respectively, with an entrance fee of 3*l.*; and as, in addition to this, the students have to pay for their own board and lodging, it is obvious that attendance at the Academy entails a considerable outlay. There are two free scholarships, and two partly free. At the London Academy, the fees amount to £15 15*s.* per annum. Another institution recently established, the College of Organists, although it does not at present attempt to provide educational advantages, except in the way of lectures to the fellows, is calculated to do a good and useful work among a large and deserving body of men; and the energy displayed by Mr. Limpus and the Council in its formation and management is worthy of high praise. While, however, we possess these three bodies in working order, it will be obvious that the advantages enjoyed on the continent, where the conservatoires or music schools are State institutions, are not shared by the English, inasmuch as our only really national academy is so crippled by want of funds that its continued existence has more than once been imperilled. Under its present principal, Sir W. S. Bennett, the institution has gained ground, and the students' concerts, conducted by Mr. John Hullah, have given proofs of the improved system adopted in the establishment. When, therefore, we reflect on the vast sums granted year by year for far less worthy objects, it is almost impossible to exonerate the Government from a charge of wilful neglect in not contributing more largely towards the promotion of an institution so essentially calculated to aid in the elevation of the people. When it is remembered that the

majority of the most able teachers of music throughout the country have been educated at the Academy, and that many of our most eminent native artistes were trained within its walls, there is ample ground for asserting that it deserves support, and we believe the facts of the case only require to be generally known in order to enlist public interest and sympathy. The Irish Academy of Music is entirely supported by the pupils' fees and public subscriptions and donations, the Cabinet having persistently refused to grant it any aid. Indirectly, the Society of Arts has aided in promoting musical education by establishing examinations in music conducted by Mr. John Hullah and Mr. G. A. Macfarren, and the large number of candidates at each examination, especially from among the Tonic Solfaists, gives a clear proof that the privilege has been appreciated. To the Rev. John Curwen, whose labours in the promotion of popular musical education on the Tonic Sol-Fa system have been so successful, high praise is due, and whatever opinion may be held by the reader as to the relative merits of the old and new notations it cannot be denied that a large proportion of the sight singers of the present day have to thank these musical neologians for the precious capacity which they possess, and which has so largely increased the range of their daily pleasures. The decision of the Committee of Council on Education to encourage musical education in primary schools is also to be noticed as an evidence of what may be accomplished by steady perseverence, although they have this year withdrawn it from the list of extra subjects for which the national schoolmasters could obtain grants. In the same connection, the inclusion of sight-singing in the scheme of the London School Board is also to be chronicled as a proof of the change of public opinion on the subject.

Looking lastly at what we have for the sake of convenience termed "Worship Music" we have strong grounds for satisfaction not only in the striking progress made of late years but in the prospects for the future. On all sides a frequent use of music in the services at our churches and chapels is insisted on as a necessary aid to devotion in places where formerly it was regarded with pious horror, and not only so, but the organ itself is making its notes heard in the kirks north of the Tweed, while scarcely a chapel of any denomination is now opened in England without an organ or harmonium. To this result the establishment of choral unions with superintending choir-masters to drill the choirs in various parts of the country has greatly contributed, and it is also noteworthy that music is far more popular among the younger clergy than it was among their ancestors, a fact of no slight importance, inasmuch as their influence either to aid or retard the progress of musical education among the people is very considerable. In former days the cloistered priests were the chief conservators of art and literature, and now that times have changed and we look for the successors of the monks in the rectories and vicarages of the land we may fairly appeal to them to throw open their schools for the holding of classes composed

of all sections of their parishioners irrespective of creed, as by this means they may directly aid in the spread of a knowledge of and love for the art. Another striking proof of the growth of a taste for music among every body of religionists is furnished by the large number of tune books which have been issued from the press during the past ten years, all tending more or less to encourage congregational singing. In the same direction, too, we may note the increase of cheap musical literature, the chief oratorios being now on sale for a shilling, and large numbers of excellent part songs at a penny each, or, in the case of children's music, even at a halfpenny. The following table will show the musical journals at present in existence, with the date of issue of their first numbers :—

Musical World, January 5, 1836.	Choir, July 18, 1863.
Musical Times, June 1, 1844.	Orchestra, October 3, 1863.
Musical Standard, Aug. 2, 1862.	Musical Record, November 1, 1870.

Of these journals the "Musical Times" and "Musical Record" are published every month, the others being weekly papers. Three out of the six contain a sheet of music in addition to the ordinary literary matter, and as a whole they may be said to compare very favourably with the French and American serials, although they are excelled in some cases by the more elaborate musical criticism of the German press.

Having thus considered the present state of the chief musical institutions in England as contrasted with the condition of affairs existing a quarter of a century ago, we will now point out briefly some of the most important conditions essential to future progress. And in the first place it seems to be impossible that any really effective system of popular musical education can be provided without State aid. To this fact the experience of the managers of the Royal Academy of Music clearly points. They have lost no opportunity of obtaining funds from private sources, but have found it to be utterly impossible adequately to provide for the carrying on of their work by such means. That the country would object to a liberal grant for the purpose we can scarcely believe when we note the readiness with which large sums are voted for the addition of pictures to our national collections, and the maintenance of the Science and Art Departments at South Kensington, and we trust that ere long some member of the government will take the matter in hand. We have now a Minister of Education, and if as in Paris the promotion of the fine arts were added to his duties there would be some prospect of seeing the work commenced. At present, what is every one's business is no one's, and thus it comes to pass that while artistes receive enormous incomes, while two Italian Opera-houses are open simultaneously, and while every form of concert is extensively patronized, the only means of raising up a native school of composers, teachers, and executants is neglected. This should not be, and the sooner the disgrace is removed from us the better.

Such a national school as we desire to see established might fitly be formed out of the present Royal Academy, which with an enlarged income and an extended scheme of operations would be well able to undertake the work. Free education ought to be provided for a considerable number of pupils, inasmuch as experience proves that some of the most gifted musicians are to be found among the lower ranks of society, and the fees payable by the other students ought to be very much lower than those now charged, while it would also be desirable to add a general educational establishment to the institution. In connection with it evening classes might be formed, and an orchestra might be permanently kept up for the trial of new works, thus offering to English composers an advantage the want of which has too long acted as a discouragement. Another important question is the best means of providing elementary training for the people, and especially the young in our large towns. The teaching of music in the parochial schools will do much to promote this result if, as we hope will be the case, sight-singing and not singing by ear is insisted on: but the adults and the young men and women still remain to be provided for. One point is very plain, that if musical education becomes general, there will in future be a better supply of competent teachers for the training of the children, and if the numerous school-rooms controlled by the local boards are made available for evening instruction, much may be done. Classes on the old notation and on the Tonic Sol-Fa system might be conducted on different evenings, and in nearly every case they would be found to be self-supporting, especially if concerts were given at intervals by the pupils. But while the poor are cared for, the higher classes must not be neglected. Music must be efficiently taught in all our large public and middle-class schools for boys; and in girls' schools, where the pianoforte has always formed a subject of instruction, the system must be altered materially from that hitherto adopted. In the place of the dull mechanical drudgery which the pupil now passes through and which can only render her tolerably proficient as far as the mere digital exercise on the keyboard is concerned, music must be taught as other subjects are taught, and "the reason why" must form an element in the teaching. In a word, the art and not the instrument must form the basis of the lesson, and the pupil in learning to play must also learn the language as well as the mere notes. The every-day conversation in our drawing rooms, and the style of music there supplied, prove that there is an immediate need of reform in this respect, and one of the most practical methods of imparting a knowledge of first principles is to bring up every child in the practice of sight-singing, as when this is satisfactorily and soundly taught, everything else will follow. Much also may be done by our composers, our concert-givers, and our artistes. Let them remember that they owe a duty to art as well as to their pockets, and as a good painter would decline to place his name on a carelessly executed picture which would

tarnish his reputation, so let the song-writers, the conductors, and the vocalists remember that they have a very important duty to fulfil, and that they can to a great extent guide the public taste. It may be true, as we believe it is, that Englishmen lack in many cases that innate power of distinguishing the true from the false in music, which is such a striking characteristic of the Germans; but there is always a tendency to ascribe to natural inferiority that which ought more truly to be laid at the door of a defective system of training. Thoroughly convinced are we that a deep love for the art exists among the English people, and we look forward with hope to the day when it will be generally cultivated by rich and poor. Its influence can only be for good, its practice can only tend to make men better Christians and better subjects, and he who wishes well to his country can adopt no surer method of promoting her true welfare than by aiding to the utmost of his power in this truly national work.

CHARLES MACKESON.

INDUSTRIAL RESULTS OF PHOTOGRAPHY.

ALTHOUGH the now familiar art of Photography may, to some extent, be regarded as still in its infancy, its practical influence in the realms of manufacturing industry has proved the reverse of insignificant. Forty years ago, the process of taking pictures by means of the sun's rays was regarded as little better than a beautiful scientific experiment, too costly and difficult to possess any chance of being frequently repeated. At the present time it forms the regular occupation of some thousands of individuals, not only in this country, but also on the continent, in the United States, in Canada, and in Australia; besides affording the means of employment to yet larger numbers engaged in the many branches of manufacturing industry, which the increasing practical applications of photography are continually calling into active existence. It has been estimated that at the present moment the photographic art, either directly or indirectly, provides employment for at least half a million persons in various parts of the world. There are no means of verifying the correctness of this estimate, but when we reflect on the enormous extent to which photography is practised in the United States alone, where every town has its photographic studio, not to mention those of the large cities, the calculation does not seem at all excessive.

The real industrial value of photography dates from the discovery of the collodion process in 1850. This formed the actual starting point of the art. It rendered the taking of permanent pictures comparatively easy and cheap, and caused the Daguerreotype and Talbotype to become things of the past. In the daguerreotype process, the portraits were taken upon plates of silver, or copper coated with silver. Despite their costly character a very considerable trade arose out of the demand for these

plates, and large numbers of persons were employed in silvering the surface of the copper, a process requiring great delicacy and care. But the leaden, death-like hue, peculiar to Daguerreotype portraits, a defect which not even the employment of colours could wholly remove, caused a greater preference to be shown to the Talbotype, in which paper was used instead of silver. Moreover, while in the case of the Daguerreotype process the portraits were reversed, as in a looking-glass, those taken by Mr. Fox Talbot's method showed the object represented as it really appeared to the eye. This was effected by means of the picture being taken upon waxed paper, which showed the lights and shadows reversed. The picture thus obtained was called a *negative*. The waxed paper, or negative, was then laid upon another piece of prepared paper, and exposed to the action of light, which, passing through the transparent portions of the picture, caused them to become darkened on the second paper, the opaque portions remaining untouched. The new picture thus produced represented the lights and shadows as in nature, and was called a *positive*. The use of waxed paper for taking negatives has now become almost entirely superseded by the employment of glass, the surface of which is prepared especially for the purpose by one of the numerous existing modifications of the albumen, or collodion processes, according to the tastes or requirements of the photographer.

In the earlier sun-pictures the want of permanency was frequently apparent. Not only were they costly, but they were no sooner taken than they began to fade. This was particularly noticeable in pictures produced by the Daguerreotype process, which frequently disappeared from the surface of the silvered plate, despite every precaution to protect it from injury. Nor were the Talbotype pictures much more successful. No reliance could be placed upon their stability. They might be almost perfect as pictures, but their permanency was always doubtful. They might endure for months, perhaps only for days; but ultimately they were certain to fade. To overcome this serious obstacle long formed the great object of Mr. Fox Talbot and his fellow-labourers in the new art. The defect arose from the instability of the metallic salts employed, as explained by an experienced writer in the "Popular Science Review," who informs us that:—"The blacks of photographic prints on ordinary unsized paper consist of silver. To aid in the proper fixing of a photograph, or destroying its future sensitiveness to light, hyposulphate of soda in solution is employed. The action of this salt on the silver in the pores of the paper is of an extremely complex nature, and long washing is requisite to secure its removal. If not thoroughly removed, an action continues to be exerted which ultimately results in the destruction of the picture, the blacks of which are converted into a sulphide of silver. But the sulphurous gases with which the atmosphere is impregnated, joined with the complex effects produced by the albumen (with which photographic paper is usully prepared), acting on the silver in a

manner not yet clearly understood, exert a distructive influence on photography. The introduction of gold toning has mitigated this evil to a considerable extent; but an inspection of some recent pictorial productions of photographers of reputation suffices to show that it still exists, notwithstanding the known care taken by them to obviate it."

Still, the numerous improvements recently introduced into the various photographic processes have done much towards giving a permanent character to the productions of the camera. We have seen photographs, taken a few years ago, which seem as clear and fresh as when they originally left the manipulator's hands. Whether they will always remain so is a secret which time alone can reveal, but the degree of durability which can now be imparted to photographic pictures appears sufficient for all ordinary purposes. The photographic art proper is most largely employed in the production of *cartes de visite* and stereoscopic views. Of the former, several millions are annually taken in this country alone. So great, indeed, is the number, that more than one Chancellor of the Exchequer is said to have considered the feasibility of materially adding to the National income, by means of a small impost on these productions of the photographer's studio. Who, in 1839, could have dreamed that the almost simultaneous discoveries of Fox Talbot and Daguerre would, within little more than a quarter of a century, not only have furnished the means of employment to many thousands of individuals, but also have suggested a new means of increasing the public revenue?

The popularity of the *carte de visite* arises from the singular clearness and sharply defined portrait characteristic of this description of photograph; the small size of the picture employing only the centre of the lens. Dr. Wynter furnishes* several interesting particulars respecting the demand for *cartes de visite*. He states that their sale is now scarcely a fourth of what it was when they first came into vogue. This, however, may be the case with the large metropolitan establishments, but in the provinces the rate of production appears to have suffered no decrease; on the contrary, the number of portraits taken becomes larger each year. With regard to the sale of *cartes de visite* of public characters, Dr. Wynter informs us that it is still immense. Mr. Mayall, the well-known London Photographic Artist, who has taken the portraits of nearly all the Royal Family, has received from Messrs. Marion, the photographic picture dealers, upwards of £35,000 for *cartes de visite* of its various members. Indeed, the popularity of these portraits has been something wonderful. When it was known that the Princess Louise was to be wedded to the Marquis of Lorne, *carte de visite* portraits of the illustrious couple appeared, as if by magic, in all the photographic print shops throughout the kingdom, and speedily found their way to America and Australia. The London Stereoscopic Company sold many thousands of these

* Supplement to 'Good Words,' March, 1869.

cartes, the demand for which still exists. The portraits of favourite actresses command a very large sale, as do those of popular statesmen, but it is difficult—save in exceptional cases—to ascertain beforehand how far the *carte* of a new celebrity will find favour with the public.

Stereoscopic views are prepared both on paper and glass, the latter, although the most expensive, being far superior, by reason of the delicacy and softness of the pictures which they afford in the stereoscope. Transparent paper views, richly coloured, also have a good sale, especially in France, where the manufacture of this description of picture seems to be better understood than in England. Stereoscopic views are divided into two classes. The first consists of representations of landscapes, works of art, portraits, and so forth. The second class comprises what may be termed reproductions of living pictures, and illustrates the readiness with which the photographic art has been turned to account in furnishing new means of remunerative employment. Suppose, for instance, a stereoscopic view of "A Music Lesson" is required. A scene is prepared, as if for a theatre; all the requisite accessories, such as pianoforte, chairs, carpets, &c., are introduced; and the living characters, appropriately attired, are carefully "posed." The cost of getting up one such scene is sometimes very great, but the expense is generally covered by the sale of the pictures, as in the case of that known as "Little Red Riding Hood," which became very popular. The preparation of the scenery for these stereoscopic pictures sometimes forms a distinct occupation of itself, but it is not so remunerative as it was a few years ago, when the stereoscope was a novelty. Stereoscopic views of actual landscapes are always in demand. The list of these views is very extensive. All the leading accessible places on the continent, in Asia, Africa, America, and Australia, have found their way into the stereoscope. We see the pyramids of Egypt, the mosques of Constantinople, the rock temples of India, the Falls of Niagara, the forests of Canada, the goldfields of Australia, the glaciers of Switzerland, the ancient cities of Italy, the lochs of Scotland, and the glens of Ireland brought before our eyes, as they actually exist. It is nature itself, and thus the educational value of Professor Wheatstone's discovery cannot be over-estimated. A few stereoscopic views of scenes in Palestine afford us a more vivid idea of the Holy Land than could be obtained from listening to half a dozen lectures. The stereoscopic views, or slides, as they are more familiarly termed, are usually sold uncoloured, save in the case of representations of living pictures; these latter—as a rule—requiring a little colour, for the purpose of heightening the effect. The slides are always uniform in size, measuring 7 by $3\frac{1}{4}$ inches, but in France an attempt was recently made to introduce a smaller description of slide measuring 4 by 2 inches. The experiment, however, proved a failure.

Photographic re-productions of celebrated pictures and engravings are extremely numerous, and are of every imaginable

size, from the small vignette, an inch square, to the large cartoon formed by joining several sheets together. Large numbers of these are imported from Germany, especially from Berlin, where several hundred men and women are engaged in their production. The manufacture of photographic copies of popular engravings is also largely carried on at Vienna and Pesth, causing serious pecuniary loss to our leading printsellers, who frequently find that on the continent excellent photographs of copyright English pictures, such as Frith's "Railway Station," are procurable at one-fourth the cost of the original engravings. In this country such reproductions are justly regarded as infringements of the law of copyright, and those engaged in the work of reproduction are liable to punishment; nevertheless there exists an extensive surreptitious sale of these pirated copies, to the great injury of both engraver and printseller. Indeed, since the recent marked development of the art of photography, the demand for high-class engravings has sensibly diminished; and it may be said that the palmy days of line-engraving and lithography are rapidly departing. This result is now being accelerated by the increasing substitution of the sunbeam for the hand as the principal engraving agent. In the Woodburytype, Autotype, and Heliotype processes, we have the seeds of a great industry, which will, at no distant period, effect a complete revolution in the art of the engraver, whether on wood or metal, and the various occupations connected therewith.

The employment of photography for engraving purposes occupied the attention of Mr. Fox Talbot almost from the first. The difficulty of obtaining good *fac-similes* of works of art, especially those of an elaborate or ornamental character, seemed to open a wide field for the use of photography if any means could be discovered whereby engraved plates might be taken from the photographic negatives. Ultimately, following up a clue obtained by Mr. Mongo Ponton, Mr. Fox Talbot found that bichromatised gelatine or gum became, upon exposure to light, insoluble in water, and that a plate could be prepared with this material from which all those parts debarred from the light might be dissolved away. This discovery naturally engaged the attention of many scientific men, who from time to time made public various methods of rendering photography useful as an agent for engraving purposes, but most of these, however excellent in theory, were found of little real practical value. The *Autotype* process was one of the first which promised a successful solution of the problem. By its means the amateur photographer can produce finer pictures than ever emanated from the engraver's hand. Bichromate of potash is the principal chemical agent employed, and the fidelity of the copies to the originals is most remarkable. The collection of line engravings at the British Museum contains nothing which could successfully compete with the productions of the Autotype Company, as exhibited in their establishment in Rathbone Place. The colour of most of these Autotypes is a beautiful monochrome, which can be pro-

duced in almost every shade, so as to exactly match the original sketch, when made in sepia, chalk, or Indian ink. Among the works illustrated by the Autotype Company is Her Majesty's "Tour in the Highlands." The drawings are by Adam, and are reproduced in a style utterly impossible by the ordinary system of engraving. But the Autotype method has one objection. Every print is produced by handwork. The process is therefore comparatively slow and expensive, except in the reproduction of works of the highest class, where the comparative cost is a minor consideration. Yet it is far more speedy and cheap than line engraving. "The ordinary process of line engraving"—says a writer in the 'Edinburgh Review,'* to whom we are indebted for some of the details above quoted—"is denied to all "but the highest class pictures; no one but a great capitalist "will undertake such works. The expense is enormous, and the "time consumed in their accomplishment renders the chance of "their being finished in the lifetime of the artist very pro-"blematical. Raphael Morghen occupied six years in engraving "the 'Transfiguration'; Doo was twelve years at work in "engraving the 'Raising of Lazurus,' and it was not finished "when it passed out of the veteran engraver's hands. It is true "we have no longer such great works as these demanding the "labours of the engraver; but the genius we still have in the "artistic world cannot fail to benefit by these newly discovered "rapid means of reproducing their works. In a week after the "picture has left the painter's easel, a proof impression is pre-"sented to him for correction."

The *Woodburytype* process is a kind of relief printing, wholly unlike any method of engraving or copying previously known. Here, again, the employment of bichromate is indispensable. A mixture of gelatine and bichromate is poured upon a glass plate, so as to produce a thin film. The plate so prepared is placed under a glass negative, when the light dissolves all those portions of the bichromatised gelatine not protected by the opaque parts of the negative, thus leaving a kind of gelatine picture in relief. The glass plate, with its raised surface of gelatine, is next covered with a plate made of type metal and lead, and placed in an hydraulic press, where it is subjected to a pressure of from 50 to 200 tons per square inch, according to the size of the plate. Despite this enormous pressure the glass plate is not broken, neither is the gelatine picture crushed, although it has imprinted a perfect fac-simile on the surface of the metal, which is now ready for printing from. The process of printing is fully as singular as the mode of obtaining the printing surface, and we regret that we have not space for a detailed description. The pictures so produced are frequently mistaken for real photographs, so beautiful is their delicacy and clearness. Like the Autotype process, the Woodburytype method has its disadvantage; all the prints produced by it have to be trimmed and mounted upon cardboard or stiff paper, an obstacle which prevents its extensive

* 'Edinburgh Review,' April, 1871.

use in the illustration of cheap works. Yet the process has a future before it. Commercially it is said to be a success; and the company owning the patent offers to reproduce fair-sized pictures at less than a farthing per copy, a cost almost nominal compared with that of engravings on steel or copper.

The *Heliotype* process is, in its method of working, somewhat analogous to that of lithography. A glass plate is spread with a film of bichromate and gelatine, covered with a glass negative, and submitted to the action of light. The surface of the glass plate, by a most ingenious process, is rendered fit for printing from lithographic ink, an ordinary Albion press being used to obtain the desired impressions. This is the nearest approach to regular picture-printing yet devised, and by its means we can obtain printed transcripts of photographs at an incredibly cheap rate. "The cost of production is so small, that it bids fair to invade all the cheaper forms of literature, and to reproduce for us drawings from nature, in place of inferior wood engravings and lithographs." The Heliotype system is worked upon a somewhat extensive scale at the works of Messrs. Edwards and Kidd, at Willesden.

Another important application of the photographic art is that discovered by Sir Edward James, and known as *Photozincography*, which forms the cheapest known method of copying when the objects to be reproduced are in simple black and white. As usual, bichromate and gelatine are the principal agents employed in producing the necessary printing surface, a plate of zinc being used instead of one of glass. By means of Photozincography the two volumes of Domesday Book have been reproduced, and are now procurable at a low rate. In like manner, not a few volumes of our national manuscripts, Magna Charta, and other important works, have been reproduced in fac-simile, the pages or portions of each MS. being photographed, and then, by means of the negative plates, transferred to the zinc. The almost incredible cheapness of the new system is illustrated by the fact that its use in place of ordinary engraving has occasioned a saving of more than 2,000*l*. per annum in the preparation of the Government Ordnance maps. It has even had a share in the recent military disasters of France for, according to a writer in the 'Edinburgh Review,' "Some years ago, Count Moltke, having heard of Sir Henry James's process, sent over officers from Berlin to learn it, and the maps with which the Prussian soldiers have been so liberally supplied in the campaign were produced by photozincography." By the aid of these maps, the Prussians found themselves better acquainted than were their antagonists with the topography of the invaded French departments.

In America photography sometimes takes the place of the draughtsman on wood. The surface of the wood block is properly prepared for the reception of the photographic picture, but the absence of lines renders it difficult for the engraver to proceed with his work, unless assisted by the pencil of the artist. The use of photography is mostly resorted to for the production

of portraits upon wood, the pictures being carefully touched up by competent artists before being placed in the hands of the engraver. The proprietor of one of the leading American illustrated newspapers has several travelling photographic studios, mounted on wheels, and so arranged that they can be placed on a railway truck or drawn by horses, for transport to the places required. By this means he is enabled to obtain, with wonderful rapidity, views of localities or occurrences of public interest, and to reproduce the same in his paper several days earlier than if he had trusted to the assistance of ordinary artists. In London, photography on wood is sometimes employed in the case of representations of machinery, specimens of pottery, and other productions of manufacturing industry; but there exists a strong prejudice against it amongst the wood-engravers. They seem instinctively to fear the introduction of the photographic art, no matter in what form, into their profession. Perhaps their fear is not unreasonable.

Micro-photography has its uses, as the circumstances connected with the siege of Paris by the Germans have clearly shown. But for the assistance of the camera, how would it have been possible to present a whole page of the 'Times' newspaper, crowded with advertisements from helpless refugees, in a space measuring an inch and a half in length by an inch in width? Yet this was effected without difficulty. These minute reproductions were sent from London to Bordeaux, thence by carrier pigeon to Paris.* "When received there, they were magnified by the aid of the magic lantern to a large size, and thrown upon a screen. A staff of clerks immediately transcribed the messages, and sent them off to the places indicated by the advertisers." In this manner communications were systematically kept up with the besieged in the French capital, despite every precaution on the part of the watchful enemy. But there are also many other useful aplications of photography. If, by its assistance, we can compress the contents of a page of the Bible into a space no larger than that occupied by the head of a pin, we can also with its aid enlarge the most minute objects to a comparatively gigantic size. A photograph of a fly's wing can be magnified, when shown by means of the magic lantern, to the extent of several square feet, a fact which makes us feel that the art is destined to form the key which shall unlock to us the wondrous secrets of the insect world, and render the microscope an almost obsolete scientific appliance. In medicine and its allied sciences the use of photography is found invaluable, and the camera is rapidly becoming a constant companion of the surgeon and physician. No human skill can rival it as a means of accurately delineating the various external aspects of disease or sickness. In the law courts also it is gradually taking the place of the expert. During the progress of the earlier portions of the famous Tichborne trial, doubts arose respecting the accu-

* 'Times,' January 30, 1871.

racy of several of the *fac-simile* letters produced. Those doubts proved to be well founded. The utmost vigilance on the part of those entrusted with the laborious task of copying the voluminous correspondence put in evidence, could not prevent the occurrence of vital mistakes; for in this remarkable case the mere spelling of a word became most important. But photography cannot err. By its agency we have exact *fac-similes* of the original letters, and are enabled to note the exact character of the writing and spelling, a result which no other agency could possibly achieve.*

Were we to mention all the various uses of which the photographic art is capable we should probably fill many pages of the 'Companion,' and perhaps weary the reader; but we ought not to omit to state that in the new Act for the Prevention of Crime several enactments are made with a view to facilitate the identification of criminals. A register of all persons convicted in the United Kingdom is to be kept; regulations for their portraits to be taken by the photographer may be made, and such regulations may prescribe the times at which and the manner and dress in which the prisoners are to be taken, the number of portraits of each prisoner to be printed, and the persons to whom they are to be sent. Any prisoner refusing to obey any regulation as to photographing is to be deemed guilty of an offence against prison discipline. Thus photography has been rendered an instrument for the preservation of order and the protection of life and property. Surely, never before had man such a useful or willing servant as this marvellous art, the capabilities of which are only beginning to be made known to us. For instance, it was but the other day that a Nottingham manufacturer took out a provisional patent for employing printing surfaces prepared by the process of photolithography, photozincography, or other printing surfaces prepared by the aid of photography, for ornamenting linen collars, cuffs, and shirt fronts. Already muslin and cambric handkerchiefs, with photographic pictures, have found their way into the market.

As before mentioned, these numerous practical applications of photography afford employment to very large numbers of persons. In London alone there are upwards of five hundred professional photographers. The 'Post Office Directory' for 1871, gives the names of over three hundred photographic establishments, without including those in the metropolitan suburbs. Assuming three to form the average number of persons employed in each establishment, we have something like fifteen hundred individuals in the metropolis depending upon the practice of the photographic art, for their means of subsistence. Then there are the provincial establishments. Of these one is to be found in almost every town; the cities and larger towns each possessing several. In nearly all of these the operations are confined to the taking of portraits. Next, we have the photographers employed

* The photographic *fac-similes* of the Tichborne letters, also the micro-photographs of the 'Times,' were taken by the London Stereoscopic Company.

in preparing stereoscopic views, or in the various processes to which we have briefly alluded. Of the actual number of these it is impossible to form any reliable estimate; even the Census returns will be found to throw very little light on this head, but they certainly form a most numerous class. A man of considerable experience informs us that he considered one thousand would not be too high a calculation for the number of those so employed in the metropolis. The printing of photographs forms a distinct occupation, and provides work for a large number of persons, including many females, who are also engaged in mounting the photographs and rectifying any little imperfections which may be noticed. The colouring of photographs is also an occupation by itself. The colourists are chiefly females, stereoscopic views being the articles which pass most frequently into their hands. In the higher branches of photographic colouring, the number of artists is comparatively limited. Most of these latter were portrait-painters, whose art has been injuriously affected by the increasing use of photography. The number of wholesale photographic publishers is comparatively limited. There are not a score of them in London. But although so few, several of these establishments do an enormous trade. Messrs. Marion, of Soho Square, and the London Stereoscopic Company, of Regent Street and Cheapside, have, within the last five years, issued several millions of *cartes de visite* alone. The retail trade is principally carried on by booksellers, fancy stationers, and toy-dealers. In many instances the sale of photographs has gradually become the leading feature of the shops wherein they are vended. The number of such places in the metropolis exceeds two thousand. These are regularly visited by travellers in the employ of the wholesale firms, through whom any new photograph which may be published speedily finds its way into the shop windows.

In the trades or occupations connected with the various processes in which photography forms the principal element, the number of persons employed is greater than is generally imagined. Take, for instance, the manufacture of photographic apparatus. The enormous demand for glass plates has exercised a perceptible influence upon the glass-making industry, and indirectly contributed to its improvement, it being necessary that the glass plates used for photographic purposes should be as clear and colourless as possible. Then there is the manufacture of the numerous earthenware dishes, baths, and other vessels, to say nothing of the immense quantity of chemicals annually required. It has been said—we know not with what truth—that the high price of eggs, of which English housewives are continually complaining, is occasioned by the vast numbers of these domestic necessaries used for the purpose of making the albumen so frequently required in preparing the glass plates and paper for receiving the desired impressions. The quantity of precious metals used in the production of chloride of gold and nitrate of silver, setting aside the other like preparations, is fabulously large, and forms the most costly department of the art. The list of chemicals employed is rather

lengthy, in consequence of each photographer having his own particular method, as in the case of the dry collodion process, for which there exist countless recipes, but the really essential chemicals are comparatively few in number. Their preparation has, however, become a distinct business. The same may be said of the manufacture of albuminised paper used in obtaining photographic prints. No photographer now cares to prepare his own paper. He can procure it more cheaply and of better quality from those who make it their business to produce the proper article required. The manufacture of photographic colouring materials is another branch of industry called into being by the new art, for although ordinary water-colours can be used those generally employed by professional colourers are specially prepared.

The production of the various apparatus used in connection with photography necessitates the employment of no small amount of skilled labour. The best lenses come from the Continent and are very costly, but those of English make are very little inferior. The cameras are invariably constructed of wood, generally of mahogany, the fittings being of brass. The manufacture of these constitutes a distinct trade, as does the production of stereoscopes and other articles of a similar character. The manufacture of cardboard has received an immense impetus from the substitution of paper for glass as a material for the printing of photographs. In several establisments the quantity of cardboard made annually has been doubled, and even trebled, within the last few years, the principal demand being for cards on which to mount *cartes de visite.* Of these several millions are produced every year, exclusive of the quantities exported to the colonies and elsewhere. The *cartes* and other photographic pictures, when mounted are placed in a metal rolling machine, which renders their surfaces perfectly smooth and glossy. The use of these and similar machines is increasing and bids fair to furnish new channels of employment for our more ingenious mechanics.

The preparation of the scenes used as backgrounds by photographic artists also forms a source of employment to numerous individuals. They are made in the same manner as the scenes used in theatres, but great care is required in the choice of colours. Slate, black, and white form almost the only tints used. The variety of backgrounds is incredible. It is found from experience that while in aristocratic neighbourhoods the sitter prefers a plain background, in more plebeian localities, such as St. Giles's or Whitechapel, nothing less than a magnificent balustrade, with fluted column and heavy curtains to match, will suffice. Besides these scenes, numerous accessories, in the shape of rustic tables, &c., are also provided from the same sources.

The erection of photographic studios is less a matter of special training, so far as the builder is concerned, than some would suppose. The photographic artist is generally his own architect, a fact which may possibly help to explain the reason why so many of the existing studios are comparative failures. They are

either too light or too dark; the means resorted to for rectifying these defects being frequently all but useless. On the other hand, several of the most perfect studios in the kingdom, have been erected under the exclusive superintendence of the artists to whom they belong. The proper fitting up of a studio requires many indispensable adjuncts, such as the head-rest, chairs, the seats of which can be raised or depressed at pleasure, books for sitters to hold, &c. The operating room is usually fitted-up with yellow glass or calico, but of late thin sheets of india-rubber have been coming into use.

Among the trades which have profited by the development of the photographic art is that of the picture-frame maker. Within the last few years the consumption of materials used in the manufacture of picture frames, and of the tasteful *passe-partouts*, has become enormously extended. Many of the *passe-partouts* are imported from the Continent, but the English manufacturers are rapidly driving their rivals out of the market. Not a few of the metal, wood, and leather frames used for *cartes* also come from abroad. The greater number, however, are of home manufacture. The same may be said of the numerous photographic albums which find their way into the shop-windows. The taste and skill displayed in their production is frequently very great. A variety of materials, such as ivory, pearl, tortoiseshell, and even coloured glass are used in addition to leather or velvet, in their manufacture. The cheapest descriptions come from Germany, but these are very inferior. The prices range from the humble shilling to the aristocratic guinea, but there are albums costing as much as five or ten guineas. The average number of portraits each album is capable of holding is fifty; some are made to contain two or three hundred, few, if any, hold less than twenty-five; and others are combined with musical boxes, which commence playing when the clasp of the book is unfastened. These albums have now become indispensable adjuncts of the drawing-room and parlour, and seem likely to retain their popularity for many years to come.

The manufacture of lockets is another trade which has benefited by the introduction of photography. The ease and cheapness with which photographic portraits can be produced on the most minute scale have again rendered the locket a favourite article of personal adornment, to the great profit of the working goldsmiths and manufacturers of cheap jewellery. The portrait is generally cut from a *carte de visite*, and inserted by the vendor of the locket.

But if the art of photography has assisted in promoting the prosperity of certain trades and occupations, and opened up fresh means of employment for no inconsiderable proportion of our population, it has also caused the extinction of various callings, and endangered the existence of others, so true is it that no public gain was ever yet secured without some degree of loss and suffering. The painters of cheap water-colour portraits have disappeared; as have the producers of *silhouettes*, those

hideous black-paper profiles, which formerly did duty as likenesses. With these have also vanished the gaudily-coloured and varnished prints representing "Daniel in the Lion's Den," "The Sailor's Return," and similar scenes, that were so frequently found in the dwellings of our labouring classes. But, for every individual deprived of his bread by the progress of the various occupations connected with the practice of photography, hundreds have found in connection with it the means of obtaining remunerative employment. The few have been sacrificed to the welfare of the many.

Indirectly, photography has exercised a powerful influence over many industries to which it apparently has no relation. By familiarising the "million" with correct representations of even the simplest objects, it has assisted in educating and refining the popular taste so far as art is concerned. Of course, other influences have contributed materially to this result, but none more so than photography. With the gradual development of a purer art taste, the unsightly plaster of Paris dogs and cats, china cows, and other eye-sores, are disappearing from the mantel-pieces of our artisans and becoming replaced by elegant vases and ornaments, more in harmony with the beautiful sun-pictures which decorate the wall above them. In fact, photography is becoming the great art instructor of the masses, and in this way is assisting materially the development and prosperity of our various art manufactures. In fact, it has become impossible to define where its influence begins or ends. Even in the commercial world it has caused thousands of pounds to be saved in the matter of samples. Does a builder require a number of metal brackets from Birmingham? Instead of having to incur the delay and expense attending the transmission of a specimen from the manufacturer, he receives by return of post a photograph of the article wanted, and gives his order accordingly. This system of substituting photographs for actual samples is gaining ground in commercial circles, the saving of time and expense being so obvious. In the manufacturing districts there are establishments devoted exclusively to the production of photographic representations of specimens of industrial manufacturing skill. In several large manufactories photographers form a portion of the regular industrial staff. But we have said enough respecting the economic value of the new art. We are only at the commencement of its history, yet we have seen enough to convince us that it is destined to play an important part in the social and industrial progress of the world, to share with steam and electricity the honour of spreading the blessings of true civilisation among the nations, and of preparing the way for that glorious, peaceful future, in which, despite the general arming of the peoples of Europe, we still firmly believe.

JOHN PLUMMER.

THE POSTAL TELEGRAPH SYSTEM.

THE control of the electro-telegraphic system throughout the United Kingdom is one of the largest commercial enterprises ever undertaken by the British Government. In accordance with the genius of our institutions we leave trade and manufactures as much as possible to private hands, seldom allowing the Ministers of the Crown to become traders or makers in the name of the State. Where there are exceptions to this rule—as in the postal system, the manufacture of small arms at Enfield, the casting of cannon at Woolwich, the making of army clothing at Pimlico, the building of ships in the naval dockyards, &c.—there are special reasons for each exception; and if any addition to the number is proposed, the Legislature scans the matter closely before giving assent. When, therefore, the purchase of the existing telegraphs by the Government was suggested, and the management of them consigned to the postal authorities, reasons for the change were expected and were given. The Marquis of Hartington, as Postmaster-General at the time when the new scheme was adopted, mentioned various reasons for expecting favourable results. Under the old system more than 700 towns had a surplus accommodation in being served each by three companies, with offices usually situated close together; while, on the other hand, there were 486 towns with no telegraphic office except at the railway station, and in 346 of these instances the station was quite outside the limits of the town itself. A central control, it was urged, would bring a great addition to the number of telegraphic messages by affording increased facilities to the public. Not only would the wires be brought into the ordinary post-offices of the principal towns, but new telegraph offices would be opened in all directions; while every letter-box, wall-box, and pillar-post would be open for the reception of the papers on which the messages are written. Moreover there would be an increase in the number of hours per day during which telegraphic work would be done. All these facilities, it was said, would encourage the public to adopt the telegraphic system much more largely than it had been adopted under the Companies' *régime*. Another temptation would be offered by a low tariff of charge—low at least for all long distances, and convenient because uniform. It was not intended that the system should yield a profit to the State. If it paid the working expenses and interest on the whole capital expended, that would suffice, the object being solely to confer on the public, in regard to the telegraph system, the same convenience enjoyed under the reformed Post Office arrangements.

Public discussion on these matters in 1866 and 1867 prepared the way for legislative action in the following years.

THE LEGISLATIVE SANCTION.

The statute which placed these important powers in the

hands of the Government received the Royal Assent on the 31st of July, 1868 (31 and 32 Vict., cap. 110). The preamble to the Act declares that—"It would be attended with great advantage to the State as well as to merchants and traders and to the public generally, if a cheaper, more widely extended, and more expeditious system of telegraphy were established, and to that end (it is recommended that) the Postmaster-General be empowered to work telegraphs in connexion with the administration of the Post Office." And then the mode of carrying out the plan is described. The Postmaster-General, with the sanction of the Treasury, is empowered to expend any money entrusted to him by Parliament for that purpose, in the purchase of lines of telegraph belonging to the several companies. All agreements for such purposes are to be submitted to Parliament before being ratified. The Telegraph Companies are empowered to sell their respective undertakings under conditions specifically declared. The servants of the companies are either to be taken into the employ of the Government, or are to receive compensation in the form of annuities. Three companies—the Electric, the British and Irish Magnetic, and the United Kingdom Telegraphic—are to be paid fixed sums defined in this Act; the terms with other companies being left for subsequent arrangement. In purchasing by agreement a company is to be bound by two-thirds of the votes of shareholders present in person, or by proxy, at a special meeting. Telegraph companies may, with certain limitations, demand to be bought up by the Government; and if they cannot agree as to terms an arbitrator appointed by the Board of Trade is to settle the matter. The wires belonging to the Railway Companies, as well as to the Telegraph Companies, are to be bought up; and the Postmaster-General is to acquire a right of way over lands, for his wires.

So much for the powers obtained; and now for the mode of exercising them. On all the railway wires the Postmaster-General is to transmit messages relating to the business of the Railway Companies free of charge. To the public a uniform rate is to be charged irrespective of distance; one shilling for twenty words, and threepence for every additional five words, the names and addresses of the senders and receivers not being included in this counting. This charge is to cover the cost of delivery by special foot messenger within one mile of the terminal office, or within its town postal delivery if it is a head office, and if that delivery extends for more than a mile from it. When, however, the addressee does not reside within these limits the message will be delivered free of charge by the next postal delivery. If the sender desires, the telegram will be sent by special foot messenger at a charge for porterage beyond such limits not exceeding sixpence per double mile. The payments, except for porterage, are to be made in stamps. Special agreements may be made with newspapers, clubs, news rooms, and exchange rooms, for the transmission and delivery of telegrams. The terms for this kind of service are to be lower during the

night than during the day; viz., from 9 a.m. to 6 p.m., seventy-five words for one shilling; but from 6 p.m. to 9 a.m., one hundred words for one shilling. The special use of a wire (if the number of public wires permits) may be granted for twelve hours a day to the proprietor of any newspaper, club, news room, or exchange room, at a charge of £500 per annum, with the consent of the Treasury to each such agreement, and with special safeguards against favoritism or monopoly. The Postmaster-General, to carry out these plans, is empowered to sell the necessary stamps and stamped forms; and to arrange that pillar-boxes and wall-boxes are to be rendered just as available for the receipt of telegrams as the ordinary receiving houses.

Such, in brief, is the Telegraph Act of 1868. Before noticing a supplementary Act passed in the following year, it may be well to advert to a difficult question which then had to be determined, relating to the conditions under which the Government would engage in this work. Ought it to be a *monopoly*, or not? In the conveyance of letters, the Post Office has a monopoly: no other corporations, companies, firms, or traders being allowed to pursue the trade of letter-carrying within the United Kingdom. The reason is that the State raises a revenue out of postal matters and does not choose to have this revenue (applied to the regular expenses of the State) lessened by competition. When several millions sterling were about to be paid for purchasing the telegraphs in the United Kingdom, it became necessary to settle whether a similar monopoly should be granted to the State for message-delivery as for letter-carrying. Mr. Frank Ives Scudamore, Second Secretary to the Post Office, on whom has mainly rested the duty of organizing the new system, has seen reason to change his first opinion on this subject; and his later views have met with acceptance. In 1868, when the first Bill was under the consideration of a Committee of the House of Commons, he stated that he did not ask the Legislature to give a monopoly to the Government: nay, he would rather work without one than with one:—"I am inclined to think that a legal monopoly would be a disadvantage instead of an advantage to us. If we had it, inventors and patentees of improvements, or so-called improvements, in telegraphic instruments and apparatus, would have to look to us, and to us only, for the use of their inventions; and even if those inventions were worthless the inventors would be able to make a strong appeal to us to try them, because there would be no one else who could try them. On the other hand, if we have not the legal monopoly, and we decline to try inventions of real merit, the inventors will have some chance of finding others to carry them out." He thought that, without any monopoly, the Government would have sufficient inducement to give fair play to any new system or improved instruments—quite as much so as the Telegraph Companies:—"When a Telegraph Company has had a large amount of capital locked up in any particular kind of instrument it has naturally hesitated to

employ another instrument, even although it might have great superiority over the existing one. The Government, to a certain extent, would have the same disinclination; but the disinclination would not be quite so strong because the Companies have to find a good dividend for their shareholders, whereas the Government need only make its system self-supporting. But there is another reason why I think the Government would be more likely to take up new improvements: this is, that no pressure whatever can be put on a commercial company to adopt any particular instrument, however good it may be; but any amount of pressure could be put on the Post Office, through Parliament, to use a new instrument if it is one of acknowledged merit." He further expressed an opinion that the public would have more confidence in the Government management of telegraphs if it were not a monopoly; that if there were no monopoly the Government would be bound by law to prosecute any infringement of it, and that such prosecution would be a very disagreeable duty for the Post Office to undertake. Mr. Scudamore afterwards modified some of these opinions. After the Act of 1868 had been passed, he heard of new schemes being set on foot for electric telegraphs in populous districts. As it is admitted that the Government will lose in some of the thinly or poorly inhabited localities where the telegrams will be too few in number to pay the working expenses, the busier commercial localities are looked to as a source of recompense; and if private companies or speculative firms are allowed to dig into those richer mines the whole system might become a source of loss rather than of gain to the nation. Some such schemes were on foot, while others were merely intended as troublesome intrusions to be bought-up by the Government as a means of getting rid of them. As a protection from speculators monopoly was now deemed necessary. The monopoly need not necessarily be a permanent one; because, as the Post Office privileges are dependent on annual estimates voted by Parliament, the monopoly could be taken away in any particular year if the Legislature so determined. Mr. Scudamore was asked, in 1869, by a Committee of the House of Commons whether he was aware that there was a disinclination on the part of the public to permit such a monopoly as this and by what argument such disinclination could be removed? He said that one ground for the public feeling was a fear that a Government entrusted with a monopoly would be lazy. "But I do not allow," he added, "that this holds good with reference to the Post Office. It does its work under the eye of the public; it does a work from day to day before the public which is extremely acceptable when well done and which is perfectly intolerable when badly done; and the result is that every shortcoming on the part of the Post Office is discovered at once, and complained of; we are always working under pressure."

As a means of carrying out the Act of 1868, and of amending some of its details, another Act was passed in 1869 (32 and 33

Vict., cap. 73). This statute makes telegraphy as much a commercial monopoly as letter-carrying. The nation is to pay a large sum of money to buy up existing concerns and to work the system, and as there are no *à priori* means of knowing whether the undertaking will be a gain or a loss to the state, a monopoly is established, in order that the best-paying wires may compensate for the worse-paying. In statutory phraseology it is announced that, "In order to protect the public revenue, it is expedient that similar powers to those conferred upon the Postmaster-General with respect to the exclusive privilege of carrying letters should be enacted with reference to the transmission of public telegraphic messages within the United Kingdom of Great Britain and Ireland." The Government (the Postmaster-General being the official representative) is to have the exclusive privilege of receiving, collecting, transmitting, and delivering telegrams within the United Kingdom subject to specified exceptions. The excepted kind of telegrams are as follow:—(1) Telegrams transmitted by private wires maintained and used solely for private use and relating to the business or private affairs of the owner. (2) Telegrams transmitted through wires maintained for the private use of a corporation, company, or person, and in respect of which no money passes as a charge for the transmission. (3) Telegrams sent by persons having the written license or consent of the Postmaster-General so to do for reasons assigned. (4) Telegrams transmitted by any Telegraph Company existing at the time of passing the Act, but whose undertakings have not yet been purchased by the Government. (5) Telegrams provided for by special clauses in the Act of 1868. (6) Telegrams transmitted to or from any place *out* of the United Kingdom. With these exceptions every person is subject to a penalty of £5 for transmitting a telegram otherwise than through the agency and to the profit of the Government. The Treasury is, by this Act, empowered to raise a sum of £7,000,000 by the creation of terminable annuities to enable the Postmaster-General to purchase existing telegraphs and construct new ones. The Postmaster-General is to pay into the Consolidated Fund all the money he receives for telegraphic work, while his expenses are to be defrayed out of annual parliamentary votes. Every year an exact account is to be rendered to Parliament of the receipts and expenses, and arrangements are to be made for paying off gradually the sum appropriated to the purchase of the existing lines, a sinking-fund for this purpose being formed out of the surplus profits of working.

A third statute, passed in July, 1870, (33 and 34 Vict., cap. 88), extends the operation of the former Acts to the Channel Islands and the Isle of Man without introducing any particular changes in other ways.

The Purchase from the Companies.

When the telegraphs were about to be taken over by the Government, it became desirable to ascertain how far the opera-

tions of Joint Stock Companies had extended in this kind of enterprise so far as concerned the United Kingdom. The Board of Trade accordingly presented the necessary information to Parliament in the summer of 1868. One return related to Railway Companies. It was found that there were 83 Companies which possessed electric telegraphs as part of their undertaking. There were 728 telegraph stations, or places from which messages were sent, used for the purposes of the railway only, and 1,226 used for public purposes only, or for public and railway purposes conjointly. There were 5,157 miles of line constructed, comprising 16,191 miles of wire. Another return related to Telegraph Companies. Those whose lines were wholly within the United Kingdom, or who owned submarine cables of which one terminus was in any part of the United Kingdom, comprised the following :—

Atlantic Telegraph Company.
Anglo-American Telegraph Company.
Bonelli's Telegraph Company.
British and Irish Magnetic Telegraph Company.
Channel Islands Telegraph Company.
Electric and International Telegraph Company.
London and Provincial Telegraph Company.
Poole and Bournemouth Telegraph Company.
Reuter's Telegraph Company.
South Western of Ireland Telegraph Company.
Submarine Telegraph Company.
United Kingdom Telegraph Company.
Universal Private Telegraph Company.

These Companies had 2,155 stations, 16,879 miles of land line, 79,646 miles of wire, 4,688 miles of submarine cable, and 8,122 miles of wire imbedded in the cables. The British or Irish ports at which the Submarine Cables started, and the Continental or American ports to which they extended, were as follows:—

From Valentia, Ireland	To Newfoundland.
Dunwich, Suffolk	Landvoort, Holland.
Lowestoft, Suffolk	Landvoort, Holland.
Lowestoft, Suffolk	Nordeney, Hanover.
Dover..	Calais.
Folkestone	Boulogne.
Beachey Head	Dieppe.
Dover..	La Panne, Belgium.
Ramsgate	Ostend, Belgium.
Jersey	Pirou, France.

Besides these, there were several small cables across seas, estuaries, and rivers within the United Kingdom :—

Portpatrick, Scotland, to Donaghadee, Ireland.
Killantringham, Scotland, to Whitehead, Ireland.
Abermawr, Wales, to Greenore, Ireland.
Blackhead, Scotland, to Whitehead, Ireland.
Across Waterford Harbour, Ireland.
Across the Humber, near Hull.
Across the Firth of Forth, near Leith.
Across the Tay, near Broughty Ferry.
Across the Solent to Isle of Wight.
Across the Dart, near Dartmouth.
Across Milford Haven, near Pembroke.
Row to Roseneath, Cove to Blairmore, Ardreaport to Ardbeg } West Highlands.

These returns do not, in themselves, show the number of telegraphic stations or of miles of wire within the United Kingdom belonging to telegraph companies, because those companies which, by means of submerged cables, connect other countries with our shores apply their statistics to the whole extent of their several undertakings. For instance, the Atlantic and Anglo-American Companies, which connect Ireland with America by means of the cables of 1865 and 1866, have five short cables measuring 563 miles altogether over portions of sea and estuary near the American coast, together with 1,576 miles of land-telegraph in Newfoundland, Prince Edward's Island, and New Brunswick.

Two or three of the Telegraph Companies possessed lines of peculiar character at the time when the return was prepared in 1868. Bonelli's Company was established to work M. Bonelli's ingenious system of printing the telegrams with types; a line of 15 wires was erected for the purpose from Manchester to Liverpool and the system was tried for some months successfully, but capital was not forthcoming to extend the operations. The London and Provincial Company had 82 stations, 163 miles of line, and 654 miles of wire, mostly within the limits of the Metropolis, besides private telegraphs for connecting places of business, fire brigade stations, postal district offices, &c. The Universal Private Telegraph Company had wires and instruments rented to private persons, mostly for private use. The plan was in operation in seven districts, and gave employment to the following number of instruments and miles of wire:—

District.	Instruments.	Wires.
London District	504	911 miles.
Birmingham District		15 ,,
Manchester District	244	386 ,,
Liverpool District		133 ,,
Newcastle District	145	431 ,,
Scotland	326	560 ,,
Ireland	59	43 ,,
	1278	2479 miles.

The system comprised, from its nature and purpose, a number of very short telegraphs independent of each other. The other Companies, such as the Electric and International, the British and Irish Magnetic, the United Kingdom, &c., had their several lines of wire connected into a vast network.

Combining the accounts sent in by the railway companies with those supplied by the telegraph companies we find that in 1868 there were within the United Kingdom 4,119 telegraph stations, 22,036 miles of line, and 95,637 miles of wire. Correction has here been made in certain instances which were entered twice by the railway companies and by the telegraph companies.

The agreements actually made and signed with existing companies for the purchase of the wires, posts, instruments, and

working plant, and for good-will and compensation of all kinds reached the following amounts at the time of the passing of the Act of 1869 :—

Electric and International	£2,938,826
British and Irish Magnetic	1,244,536
Reuter's	726,000
United Kingdom	562,264
Universal Private	184,422
London and Provincial	60,000
	£5,716,048

The general rule adopted was to pay the companies twenty-one times as much as the annual profit of their working, or, more briefly, twenty-one years' purchase, after deducting an amount for depreciation of plant by wear and tear. That these terms were liberal was shown by the fact that the prices of telegraph companies' shares rose largely and rapidly in the market as soon as the conditions of purchase by the Government were known. It was felt that the new system would start badly if the companies had any reason to complain of niggardly treatment.

Commencement of Working.

When the Act of 1868 had been passed the Postal authorities could not at once proceed to purchase the existing telegraphs because the money for so doing was not yet voted by the House of Commons and because many preliminary enquiries had to be made. Skilful and experienced persons were deputed by the Postmaster-General to examine all the telegraphic wires, some of which were found to have been deteriorated by the smoke and fumes of the great towns ; to examine all the telegraphic instruments and the galvanic batteries which furnished the motive power in order to estimate the amount or value of depreciation in wires and instruments ; to visit all the post offices and telegraph offices in the United Kingdom ; to enquire what new offices and what alterations and improvements in those already existing were needed ; to ascertain the relative efficiency in the several codes or systems of telegraphic language ; to prepare maps on a large scale for showing old and new circuits of transmission ; to examine the accounts of the Companies with a view of estimating the net profits realized ; and to obtain the consent of no less than four thousand persons and local boards in selecting and appropriating spots for new offices, lines, posts, and wires.

These preliminaries being settled and the money voted by Parliament the existing telegraphs were for the most part purchased during the later months of 1869, but formal possession was not obtained till February, 1870. At that time the number of telegraph stations transferred from the Companies to the Government was 1007 ; the total has been rapidly increased since, chiefly by transacting telegraph business at the ordinary post

offices. The additions in fourteen successive months were as follow :—

1870.	April ..	98	1870.	November..	118
,,	May ..	41	,,	December..	104
,,	June ..	94	1871.	January ..	110
,,	July ..	104	,,	February ..	95
,,	August ..	119	,,	March ..	100
,,	September..	115	,,	April ..	73
,,	October ..	128	,,	May ..	77

Several hundreds have been added in the six months subsequent to May last. On the day of the transfer to the Government, there were 1900 railway stations at which telegraphic business was conducted, and these, added to the 1007, made a total of 2907. The number of railway stations at which telegraph work is done is now somewhat smaller than before, owing to the re-arrangement of the system. On the 31st of May, 1871, there were in operation 4211 telegraph stations, 2383 being postal and 1828 railway.

The numerous ways in which it has been necessary to expend capital, in addition to the compensation to the several companies for the purchase of their lines of telegraph, show how vast and complex is the whole system. The following were the principal items down to the end of June last :—

New telegraphic poles	£49,813
New telegraphic arms	11,674
Galvanized iron wire	107,795
Gutta-percha covered wire	46,325
Insulators	31,266
Bolts, brackets, guards, &c.	25,161
Instruments	46,752
Batteries	14,058
Pneumatic tubes and apparatus ..	13,021
Pipes and boxes	9697
Short submarine cables	79,647
Extension of lines	99,286
Buildings and alterations	99,977
Instruction and bonus to learners ..	10,721
Tools, and other working items.. ..	14,950
Engineering and travelling expenses ..	177,094
Legal and miscellaneous expenses ..	89,657

These items amount to a total of about £930,000.

Staff of Servants.

An important and interesting feature connected with the new system was the organization of a staff of persons competent to manage the telegraphing instruments and to conduct the varied office business. When the lines of telegraph were made over by the Companies to the Government they were giving employment to about 2,500 persons, 2,030 males and 470 females. Nearly all of these were employed by the Government and regarded as civil servants of the Crown, being graduated in classes for pay and promotion according to their ascertained merit. As a large and steady augmentation of the working staff would inevitably be needed it became important to determine in what manner new hands should be obtained and drilled, and whether males or

females should predominate among them. Mr. Scudamore in one of his reports to the Postmaster-General adverts to many reasons why women are suited for this kind of work. They have quickness of eye and ear and delicacy of touch, they are more patient than men during long sitting in one spot and take more kindly to sedentary employment; they will willingly work for lower wages than men; the remuneration will tempt women of fairly good education, while men equally well educated would seek for some employment bringing higher pay; and lastly, women are less disposed than men to "strike" or combine for the purpose of extorting higher wages. Moreover, it is found that the tone of behaviour among the whole staff is raised by the employment of women among them, provided prudent and kindly supervision be exercised. The women would be employed only during the day, and comfortable arrangements would be made for their meals. They would bring with them the materials for their own dinners, but would be provided gratuitously with cooking vessels, crockery, table-linen, firing, and attendance, and would be also furnished freely with tea and bread and butter at certain hours. These observations were meant by Mr. Scudamore to apply chiefly to the great central telegraph-station in the City, but the fitness of women and girls for telegraph work generally in country as well as in town was strongly affirmed by him.

The augmentation, whether in the number of male or of female assistants, had to be obtained; and a noteworthy system was adopted for this purpose. Most of the clerks employed by the companies were conversant each with only one kind of instrument, and required much drilling before they could work the new Government system. Moreover, the telegraph clerks at the railway stations could not be removed until substitutes had been obtained for them. Under these circumstances a competent corps of trained clerks was organised to teach all the others. Each of these teachers traversed a certain district, passing from office to office, guiding and assisting the learners, teaching them how to practise on dummy instruments provided for the purpose, and noting and reporting their progress. A bonus of 1*l.* was promised to any postmaster, receiver, sorter, or letter-carrier, or any member of his family, who could satisfy an examiner of the possession of a certain degree of proficiency in the management of telegraphing instruments. Telegraph schools were also established to train persons for direct appointment, without any bonus.

Under the system thus organised the number of clerks or telegraphers increased from 2,500 at the beginning of 1870 to 5,000, and the number has since been augmented by several hundreds. Out of these, about 1,500 were young women, some of whom were placed in the Central Telegraph Department and the rest as assistants to postmasters in town and country. The bonus of 1*l.* per head has been the means of introducing about 2,000 new hands, mostly the sons and daughters of letter-carriers and sorting clerks. At the telegraph schools established in London in 1869, and in some country towns in 1870 and the following year, young

persons receive sufficient instruction to render them useful in telegraph work in periods varying from two to three months. The young clerks when sufficiently taught commence work at 12*s.* per week for males and 8*s.* for females, efficiency leading to a proportionate rise in salary ; it is said that the average is about 15*s.* per week for females and 25*s.* for males. These are the *telegraphers*, the actual transmitters and decipherers of the telegrams.

Many of the young women employed are the orphan daughters of professional men, or of tradesmen and clerks, the salary being sufficient to tempt many who would otherwise be sempstresses. The telegraph schools have supplied occupation for about twice as many females as males. In the night males only are employed ; and men also attend to the telegrams to and from foreign countries, many of which are in foreign languages.

Besides the clerks at the various stations boys are employed as messengers to carry the telegram-papers to the houses of the addressees. These boys required a good deal of drilling, but they have gradually been brought into excellent order. One Sunday last spring the London contingent assembled in the City whence they marched to Westminster Abbey, where Dean Stanley delivered a special address to them. At the date when the telegraphs were transferred from the Companies to the Government there were 1,470 messengers employed, and the number has since largely increased.

The Telegraphing Instruments.

It will not be necessary to describe in detail the beautiful instruments employed, but some notice is desirable of the different kinds or classes which are now competing for the favour of the postal authorities.

Needle Telegraphs.—These have a visible needle in front of a dial and two handles or levers worked by hand to give an upright or a diagonal position to the needle. Each position *means* something—a letter, a word, or some symbol which is rendered interpretable by a code of official language. In the body of the case are coils of wire and other apparatus in ready communication with galvanic batteries. When the handles are moved the needle moves also ; a galvanic current is excited which travels through a telegraphic wire to any distant station and moves the needle of a similar instrument at that station. Each clerk can thus see the message sent by the other, for the message really consists of certain visible movements of the needle. The needles at the two stations show similar positions at any given instant when at work, the one giving impulse to the other. The transmitting clerk places the needle of his instrument in such successive positions, or subjects it to such movements, as will suffice to convey a message ; while the receiving clerk at the other end of the line watches the visible movements of the needle in front of *his* dial, and reads the story of the message thus communicated. The

first instruments employed had two visible needles, but it is now found that the simpler single-needle instrument is easier to use and equally effective. The working of the needle instrument is more easily learned by young hands than that of others presently to be described, and is less liable to get out of order; but there are not such good means of detecting and correcting any mistakes that may be made in transmitting the message by it. It is used in the Government telegraphs for many lines of route.

Bell Telegraphs.—In these there is a mode of arranging two bells susceptible of being sounded by the electric current; these bell sounds have a meaning given to them by a code-book of signals. In the bell instrument a needle telegraph acts upon two bells varying in tone placed on either side of the receiving clerk's desk. The plan is said to admit of very rapid work, and to be especially suitable for the transmission of press or newspaper telegrams. The bell is sometimes used as a receiving instrument with other systems besides that of the needle.

Recording Telegraphs.—The needle instrument leaves no record of its handy work. It writes nothing, prints nothing. If the receiving clerk fails to watch the movements of the needle he learns nothing of the message sent. So, in like manner, the bell instrument leaves no record; it sounds, but if those sounds are not heard and interpreted at once the signalling is in vain. Hence has arisen the conception of *recording* telegraphs to produce a permanent record of each message, and the object has been attained in a most ingenious way. The signals as received at any distant station are permanently written by the instrument itself, either in ordinary letters or in a special alphabet of dots and dashes. Professor Morse's system is the one most extensively adopted in various parts of the world, although its use in England is comparatively of late introduction. The dots and dashes are so selected that each group represents a particular letter. For instance, *e* is expressed by a dot, *t* by a dash, *n* by a dash and a dot, *a* by a dot and a dash, *b* by a dash and three dots, &c. In this way, by arranging from one to three dots and dashes and placing them in varied array, all the letters of the alphabet can be symboled and many short useful words besides. The dashes are about $\frac{3}{8}$ inch long, the so-called dots are in reality shorter dashes, about $\frac{1}{8}$ inch in length. A narrow strip or ribbon of paper is unwound and carried forward by clockwork; an electro-magnet has a lever connected with an inking apparatus which comes at intervals in contact with the paper, leaving on it ink-marks which may be dots, short dashes, or long dashes, according to the duration of the contact. By placing the finger on a stud or key and playing, as it were, in crotchets and quavers, the instrument produces dashes and dots. So generally useful is the Morse instrument found in practice that it has been very extensively adopted by the Post Office; and still more so the Morse alphabet or code which may be employed with instruments of other kinds. Originally the dashes

and dots had the form of embossed un-inked indentations; but it is now usual to adopt the inking plan.

Printing Telegraphs.—Morse's instrument, and others which have been invented, are usually called *printing* telegraphs; but it would be more convenient to give them the name of recording telegraphs, seeing that they only make embossed or coloured marks as symbols. This would enable us to confine the name of printing telegraphs to such as really print by means of inked types. Professor Hughes, of New York, has invented a most ingenious apparatus for this purpose. There is a keyboard, something like that of a miniature pianoforte, having as many keys as there are letters, figures, and other symbols in the code employed. Moveable pins are arranged vertically round a circular frame, which revolves on a vertical axis, and clockwork keeps the frame rotating while the pins are connected with the keys. A horizontal arm sweeps round continuously a little above the circle of pins. The letters, figures, and other symbols are engraved on the edge of a wheel, which is driven by the same motion as the horizontal arm; and the adjustment of the several parts is such that whenever the arm passes over a pin the letter on the type wheel corresponding with the key of that pin comes just opposite a ribbon of paper. If the finger be pressed on a key the corresponding pin is raised and made to touch the under side of the horizontal arm, which glides over it. So long as this contact continues an electric current is in action; when the contact ceases the current ceases. This beautiful instrument is largely used on the Continent and is rapidly coming into favour in England. The receiving instrument yields a really printed slip, in Roman type, which is gummed on a blank form, and sent by messenger to the addressee.

Automatic Telegraphs.—This name is given to many systems, in which the instrument *sends its own telegrams*, after the manipulator has made certain adjustments. Bain, Allen Bakewell, Caselli, Bonelli, and other inventors have produced instruments for this purpose, but Sir Charles Wheatstone's Automatic Telegraph is that to which the authorities are now paying most attention. It certainly is a masterly contrivance. Dashes and dots, as on Morse's plan, are perforated in a paper ribbon, the dashes near one edge, and the dots near the other; or, rather, all the perforations are as small as pinholes, their arrangement denoting whether they are to be interpreted as dashes or dots. In making these perforations three studs are pressed down to make dots, dashes, or spaces by a kind of pneumatic action. When the ribbon of paper is once prepared it is fed into an instrument called the transmitter, which has an electromagnetic arrangement for sending the message to any distant station; or, more comprehensively, the perforated ribbon may be made to pass through three transmitters in succession, sending the same message through one wire to a distant spot, from which three wires diverge to three different districts. The ribbon is fed into one transmitter, which by clock movement draws it in at

the rate of an ordinary message per minute, and flashes the signals of the message to one of the three distant districts; the ribbon passes into and through a second transmitter, which sends the message to a second district, and so on to a third. The holes in the ribbon act, when in the transmitter, somewhat in the same manner as those in the cards of a Jacquard loom. At the receiving end inked or coloured dots and dashes on a ribbon of paper are the result. Great importance is attached to the prospective capabilities of this system as by it one wire, say from London to Birmingham, may be made to do threefold as much work as on the ordinary plan.

There is also an invention of Sir Charles Wheatstone's, called the *A B C Telegraph*, used to some extent in connection with the Government system.

It must not be inferred that the above descriptions include all the instruments used, nor all the improvements introduced, for the system is in a perpetual course of development. The authorities, not bound to use any particular instruments, are ready to avail themselves of all real improvements; and hence inventors are encouraged to exercise their best ability in the matter. No less than 1,900 telegraphing instruments were made for the Government in the first year of working, together with 15,000 galvanic batteries, 2,000 miles of wire covered with gutta-percha, and 3,000 tons of galvanised iron wire—all in addition to the supplies taken over from the Companies.

The Central Station and its Arrangements.

When the large and important additions to the General Post Office in St. Martin's-le-Grand are completed the centre of the telegraph business will be located there, but at present the chief office is in Telegraph Street, a small opening on the east side of Moorgate Street. Before the transfer of the lines to the State there were three Central Telegraph Stations in the City, viz., the Electric and International in Telegraph Street, the British and Irish Magnetic in Threadneedle Street, and the United Kingdom at Gresham House; since then the first has superseded the other two. It is known to the *employés* by the initials T. S., which, for brevity, we will likewise use. In the basement of the building are steam-engines, air-pumps, galvanic batteries, and store-rooms. On the ground floor are the sending-out or delivery-room, the inspectors' office, the inspectors' dining-room, the male clerks' dining room, the writing room for the press, the surgery or medical attendant's room the "intelligence" room, the messengers' room, and the engineers' workshops. In the press room and the intelligence room every facility is afforded for the transmission of telegrams to the country newspapers, under a system described in a later paragraph. On the first floor are the superintendent's office, the engineer's office, the dining-room and kitchen for the female clerks, the matron's room, and chief of all, the metropolitan gallery. The second and third

floors contain other rooms and galleries for the receipt and transmission of telegrams. This station or office is chiefly for the transmission of messages to all parts of the United Kingdom, but it also receives messages for delivery within a certain limited district around. It is practically a place for re-transmission. If a telegram had to be sent from Chelsea or Southwark to Birmingham it would be transmitted to T. S. and thence re-transmitted to Birmingham. So also from Dover or Brighton to Manchester or Liverpool, and the like, modified as additional wires are laid down.

At the Central Office all the papers on which the messages are written for transmission to various parts of the United Kingdom are thrown promiscuously upon sorting-tables, whence, when the sorters have separated them according to districts, they are carried to the instrument tables. This carrying used to be done by messengers or porters, but an ingenious improvement in the matter has recently been introduced. Carrier tapes or endless bands run over metal pulleys, so arranged that couplets of tapes run parallel in the same direction in such a way as to hold the telegram papers between them. The junction of two sets of pulleys forms a natural inlet for these papers, which are drawn in rapidly as soon as they are placed edgewise towards it. Much time, expense, and confusion are saved by this ingenious plan. When the papers reach the instrument tables the clerks at once translate the written words into telegraphic symbols or signals, which are forthwith flashed along the wires.

The Metropolitan Gallery, as it is called at T. S., is devoted to local telegrams, those which are sent from one part of the metropolis to another. There are distinct and separate wires from all the postal district or head district offices to this gallery, where nearly two hundred instruments, chiefly Needle, are employed. There are now nearly four hundred telegraph offices in the metropolis, mostly post offices; and the metropolitan gallery at T. S. is made the medium of communication between them all. Long rows of tables cross the gallery, at which sit the young women telegraphers, each with an instrument before her and the name of a circuit which that instrument accommodates. When the telegrams are collected from the London Postal Districts, they are sorted; those for the country are sent to the Provincial Gallery, while those for town are further sorted into districts. Some of the telegraph wires in the metropolis are enclosed in tubes or troughs underground, but the majority are of the over-house kind which are familiarly known in most parts of London. The underground wires are of copper, embedded in gutta-percha, and wrapped round with tarred hemp.

The Provincial Gallery just mentioned is more important than the Metropolitan, as within it are managed the transmission and receipt of telegrams to and from all parts of the United Kingdom outside the metropolis. In reference to the outgoing telegrams the papers on which the messages are written are given to the clerks, each of whom manages a telegraphing

instrument connected with a wire or group of wires arranged according to districts. There are more than three hundred circuits or lines of wire brought into the gallery, placed topographically, each region or district distinct from the others. Several different circuits go from London to Liverpool by different routes, the termini of all of these being in the same part of the gallery; and so with other large and important towns, two or more circuits accommodate each of them. The clerks in charge can see at a glance whether the wires serving a particular district are all equally busy, and can make arrangements for feeding them all equally with messages. There are more than 150 instruments in the gallery to send and receive messages; the most numerous are those on the Morse principle, the others being Needle, Hughes, Bell, and Wheatstone. There are 60 miles of wire to connect the instruments in this gallery with the galvanic batteries which are placed beneath. There is also a test box through which many hundreds of wires pass coming from all parts of the kingdom; each wire has a number attached to it and each is tested every day by means of delicate galvanometers, which will detect not only any fault or defect of insulation in the wire but the locality where it occurs.

The Pneumatic Dispatch Tubes.

The *Pneumatic Dispatch* is likely to be an important adjunct to the telegraph system. As originally planned the dispatch was for the conveyance of parcels and bags of letters. A large iron tube, three or four feet in diameter, was laid under the carriage-way from Euston Station to the General Post Office, *viâ* Tottenham Court Road, Holborn, and Newgate Street, but it has not yet to any great extent been rendered practically available, although a tube, somewhat smaller in diameter, is in use between the Euston Station and the N. W. District Post Office in Eversholt Street, a few hundred yards off. On the intended system, whenever fully carried out, the parcels and mail bags will be put into an iron carriage, the wheels of which run on two rails laid along the bottom of the interior of the tube; a steam engine will pump a portion of the air out of that part of the tube which is in front of the carriage and by virtue of the partial vacuum thus created the carriage will be sucked along.

So far as regards the prospective working of the Pneumatic Dispatch as a kind of Metropolitan Parcels' Conveyance system we have no concern here, but it has suggested an arrangement singularly convenient for the requirements of telegraphy. Tubes of small diameter are in use by the post-office authorities—not for the conveyance of letters, post-cards, newspapers, book-packets, samples, or money orders—but for carrying the sheets of paper on which messages are written. If a message is directed (say) from Fleet Street to Liverpool, it is not flashed at once from the one place to the other because the wires may not be so arranged as to permit of this. It is sent to the central office at T. S. and thence transmitted by electric

agency to Liverpool. Now there might be two modes of sending from the receiving office in Fleet Street to T. S.—by signalling the telegrams along local wires, or by sending the written papers by foot messengers. In practice a better mode than either of these is gradually being adopted. Small pneumatic tubes underlie many of the streets of London; seven of these were at work before the transfer of the telegraphs to the State, and many more have been laid down since. They connect the great station in T. S. with the General Post Office in St. Martin's-le-Grand and with receiving offices in Fenchurch Street, Leadenhall Street, Threadneedle Street, Cornhill, Old Broad Street, Founders' Court, Fleet Street, Charing Cross, the Stock Exchange, Lloyd's, the Baltic Coffee House, Gresham House, &c. On the adjustments being properly made a partial vacuum is produced in the tube and a small roll of written messages is sucked along. A little consideration will render the usefulness of this plan evident. The tubes are employed mainly to connect the central station with certain other London stations which collect and deliver more messages than could be conveniently transmitted by wire. One, for instance, goes to the Stock Exchange, which it would be impossible to serve properly in any other way, the messages being important as well as numerous, crowded into the busy hours of the day, and liable to sudden augmentation on any change in the Money Market, declaration of a new rate of discount, or political crisis. Several messages, each written on a sheet of paper, are put into a little carriage called a carrier, and blown or sucked through the tube by Mr. Latimer Clark's pneumatic apparatus. Similar tubes are in use at Dublin, Glasgow, Liverpool, Manchester, and a few other large towns.

A beautiful improvement on this system has been introduced by Messrs. Siemens and Halske; it has been at work in Berlin for three or four years, but was not adopted in London till the beginning of 1871. To understand its nature and purpose we must bear in mind that, on the old or Latimer Clark system, each tube can render only one kind of service, such as conveying telegrams from the Stock Exchange to T. S., without any intermediate stoppage. But, in any extension of the system, it would be desirable that the same tube should serve three or more stations; and then the question arises, how to make the little carriage stop at the proper places, and give up the papers destined for those places? Messrs. Siemens and Halske have solved this problem by an adoption, or rather imitation, of the railway block-system. The carriers or carriages are thin cylinders, nearly fitting the tube, which is about $2\frac{1}{2}$ inches in diameter. The carrier is blown along the tube at the rate of thirty miles an hour; an air-pump at one end makes a partial vacuum or plenum, according as rarefied air or compressed air is to be employed; while the friction of a ring of brushes, and the check of an India-rubber buffer, bring the carrier to a stop at the other end. But the arrangement at any intermediate

station is the most remarkable. Let us suppose a tube from T. S. to Charing Cross, with intermediate stations at St. Martin's-le-Grand and Fleet Street. At each of the intermediate stations are two small pieces of tube, the *transmitter* and the *receiver*, each equal in internal diameter to the pneumatic tube; they are of equal length, and a piece is cut out of the tube equal to that length. By the action of a simple lever the transmitter and the receiver may in turn be brought into a right line with the tube, so as to form part of it. The transmitter is open throughout, but the receiver is partially closed at one end. When T. S. is about to send a carrier-full of message papers to Charing Cross, signals are sent to St. Martin's-le-Grand and Fleet Street to keep the line clear. The transmitters are put in a line with the tube and the pneumatic current blows along the carrier to Charing Cross without any intermediate stoppage. When, however, the messages are intended (say) for the Fleet Street Station, a signal to that effect is sent from T. S., and Fleet Street puts the receiver instead of the transmitter into the line of route. The carrier, in its rapid journey, is arrested at that point by the partially-closed end of the receiver; a click is heard; an operator draws the receiver aside, takes the messages out of the carrier, and places the transmitter in the line of route, ready for another plenum or vacuum. In practice, the carrier is usually (to use a railway analogy) a stopping train; it stops at both the intermediate stations, where it is opened, some papers taken out, others put in, and then it is sent on again. In order properly to work this ingenious system the basement story at the central station is provided with a steam-engine, air-pumps, forcing-pumps, and vessels for compressed air. When a cylinder or carrier full of messages is to be sent a signal is touched which rings a bell at the receiving station, Fleet Street, or elsewhere; the carrier is put into the tube, compressed air is laid on, and the carrier is driven swiftly on its journey. When, on the other hand, it is known that messages are about to be sent *to* T. S., rarefied air instead of compressed air is laid on and the carrier is drawn by suction. To use a rough simile in the one case the carrier is pushed behind, in the other pulled in front, although in both cases the moving force is simply the difference between two bodies of air slightly unequal in density.

Varieties of Telegram.

Among the various kinds of telegram entrusted to the Postmaster-General for transmission not the least important or interesting are those connected with the newspaper press, for which the proprietors are willing to pay handsomely. The Post Office authorities do not undertake the business of collecting news and transmitting it to the newspapers. This work is thrown open to all who choose to undertake it; and the Post Office gives equal facilities to all. The two principal bodies who take up this enterprise are the "Press Association," and

the "Central Press." When the telegraphs were in the hands of the companies they transmitted Press news to 144 towns, for 306 subscribers; at the beginning of 1871 the Post Office transmitted to 365 towns for 1,106 subscribers. In like manner the number of newspapers supplied rose from 173 to 467 by the transfer from the companies to the Government. Once more, in the twelve months before the transfer, the companies transmitted about 6,000 words of news daily during the session of Parliament, and at other periods of the year about 4,000; whereas in the twelve months after the transfer, the Post Office transmitted 20,000 words of news daily during the session, and 15,000 on other days. The ordinary correspondents of newspapers, in addition, hand in something like 20,000 words per day for transmission. Several newspapers pay £500 a-year each for the exclusive use of one wire each during the night hours. The way in which news is sent off during the night to the country newspapers is nearly as follows. Suppose sheets of manuscript, written out in English from a short-hand writer's notes of a debate in the House of Commons, to be sent to the telegraph office at Charing Cross or at Fleet Street. They are coiled up into a roll, and sent through the pneumatic tube to T. S. If Wheatstone's system is adopted three clerks punch holes in three strips of paper, the holes representing the letters and words of the message. The strip passes through a Wheatstone transmitter, and almost at that very instant copies of the message are reproduced on strips in receiving instruments at distant towns. The original strip passes through a second transmitter, and the message is reproduced at other towns; then through a third, and the message re-appears at still other towns. In this way, news can be sent to perhaps a dozen towns at once; the original strip passes through all the three transmitters without a hand or finger being applied to it. The received message is written out in manifold, and sent to two or more newspapers in the same town.

One peculiar growth of recent years is the racing telegram—the transmission of short messages relating to horse-races, boat-races, and the like. This business is said to be large and lucrative but troublesome on account of the eagerness and excitability of the persons who bring the telegrams for transmission. The race meetings in 1870 supplied 114,779 telegrams, of which 12,784 were for the newspapers, and the remaining 100,000 or so for private individuals. Newmarket supplied one-third of the whole number. On the day when the Cæarewitch race was run nearly a thousand messages were taken in at the Newmarket Telegraph Office in three hours, and dispatched to their destination along the wires, and 800 in two hours on another day in the same week. The Doncaster Meeting, however, produced the largest number of telegrams on any one day; 2,000 were dispatched on the St. Leger Day, of which 500 were taken in at the Grand Stand and cleared off within an hour and a half. Epsom, though attracting a larger number of visitors

than any other race, only sent 5,890 telegrams during both meetings; the class of persons assembling there, and the vicinity of the place to London, rendered the telegraph at the spot of less importance than at Newmarket, Doncaster, &c.

With reference to ordinary commercial telegrams, many persons bring their messages to the offices ready written on stamped paper. This plan, which saves time and trouble to all concerned, is encouraged by the authorities, who are willing to provide for large firms interleaved books of stamped message-forms, with the name and address of the sender printed on each form. This still further economises time. In like manner, for delivering messages to the addressees time-saving contrivances are one by one adopted. When the messages telegraphed from other stations are properly recorded on paper in the Provincial and Metropolitan Galleries at T. S., the papers pass down a pipe into a lower room, where they are put into envelopes and sent by messengers to the houses or offices of the addressees. If these addressees are good customers printed addressed envelopes for each firm are kept in stock in the sending-out room.

Besides the various machines, lines, and working arrangements already named, the Government possess some thousands of miles of wire leased to firms who have the exclusive use of one wire each. A few of the great newspaper proprietors do this, although it is more customary for two or more of them to club together.

There is one matter relating to the *language* of telegrams which may be here adverted to, although it does not affect our home stations so much as the long lines of route abroad. All the symbols used, whether by the needle, the Morse, or other systems, are translatable into language. The United Kingdom, the United States, British America, and the English Colonies generally, use the same tongue for commercial and literary purposes; but on the continent of Europe, in Asia, and in Africa, there is of course great diversity. Cables underlie the sea from England to France; wires run through France and Italy to the northern shore of the Mediterranean; another cable passes across that sea to Egypt; then other wires to Suez, and another cable down the Red Sea to India; or the home cable touches the continent at Ostend or at some port in Holland and connects with wires passing through Germany, Hungary, Turkey, and Asia Minor; or through Russia and over the Caucasus to Persia, whence a cable stretches down the Persian Gulf towards India. In passing from one country to another changes of language and of dialect frequently occur; and unless the telegraph clerks are careful at their work mistakes in the telegrams are very likely to arise. If a message could be at once flashed to its destination misconstruction of its meaning would be less likely; but in practice, on long lines comprising cables as well as wires, the message is repeated two or more times. A Russian, a Turk, a Persian may all be concerned in transmitting one telegram; and as neither one knows the language of the other, an erroneous interpretation of the

dash and dot symbols may easily arise. Ludicrous examples of enigmatical telegrams occasionally present themselves. At the end of 1869 and the beginning of 1870 telegrams from England to India passed through Russia and Persia, and many of them reached their destination in a state of distortion hardly conceivable. The 'Bombay Gazette' and the 'Sydney Morning Herald' gave the following as examples of the form in which telegrams, sent from London on various dates in December, 1869, reached India and Australia :—"London, 17th.—Alderman salomon titus salt baromds crawfords refused corranclay another agriablan assination ireland carecton butury catholic archbishop Armach. 21st.—Days insurrection volontry Barcelona refused disarm erektea bariechres tatetupl send amaise of severe fighting orders restored Jestik Fleary pattot cornnued sonied. 22.—letter popp Rumming Kumming contat allap non-Catholics auter encommedial Concil for discussion from already contend abitury generally chained hoals ford times braves suppes deserved with drawtok to presented spot his government saying excepted instructions and Washington Government disavowes, proedirm, a amors King Portugal accepting throne shrit abdicating favour Creditary prince secretary governor tarasend—assassinted republican mob for attempting put down revolutionary flow bank hole Cambreisen discute runoured large withdrawal to-morrow sneely telegraphed Washington Spain resolved not negociate for sales Empereur Napoleon have given audience to Lord Clarendon prince prussian Coning Constantinople afterchetir suez brashop excited. 27th.—Having change prefory by shareholders against manger directors Albert Assurance for consgnai conweed Saturday Ignidotlors examined no cancil fremd on part directors cose adanaten. 29th.—spisow clarundas al ounheral association lord been an continent head opportunity collectired opinions seen persons who exercise influence on bestiwos Europe and believe at no time since prussians austrian paer existed faviar paus pant monte montement blessing peace."

A Londoner, knowing something of the European topics of public talk and newspaper writing at that time, may form a slight guess at the probable meaning of parts, at any rate, of this conglomeration ; but in a distant hemisphere it was of course a hopeless muddle. Even in England, however, blunders occur, sometimes vexatious, sometimes only ludicrous. Mr. Scudamore narrates a few instances that have come under his notice since the transfer of the telegraphs to the Government. A gentleman telegraphed from London to his brother in the country to send a *hack* to the station ; the signal for *h* is four dots, and for *s* three dots ; the telegraph clerk made three dots instead of four, and the gentleman found a *sack* instead of a *hack* awaiting him. A firm in London telegraphed *send rails ten foot lengths ;* now a dash and a dot signify *te*, but two dots signify *i ;* the clerk made two dots instead of a dash and a dot, and the message appeared in the form *send rails in foot lengths.* Here the sender was partly to blame ; he should have put one more word in the message, *send*

rails in ten foot lengths; the context would have served to guard the clerk against making a blunder.

The Tariff of Charges.

The adoption of a uniform rate of charge for telegrams, without regard to distance of transmission, was based on the same reasoning as that which, thirty years ago, led to a uniform postage rate for letters. If the charge were made dependent on the distance, there would be but very few telegrams sent between places two or three hundred miles apart; the charge would be too high. But a uniform tariff would encourage the use of the telegraph and the shorter distances would help to pay for the longer. This matter underwent full discussion in connection with the Act of 1869. Mr. Scudamore said to the Committee: "The inhabitants of large towns will get a very considerable advantage out of our system, even if they do not get it in the reduction of the rate for town (local) messages. The inhabitants of large towns are not engaged solely in telegraphing to each other, they telegraph to all parts of the country; and they will obtain, in return for the uniform rate which we impose upon them in the towns themselves, a very large reduction of rate on the messages they send to distant parts of the country. Of these latter they send no less a proportion, if not a larger proportion, than they do of messages within the town." Under the companies there was one telegraph station to about 13,000 inhabitants; under the Government system it was intended that there should be one to every 6,000 inhabitants at the commencement, but the accommodation will be gradually increased so that eventually there will be nearly three times as many telegraph offices as before, greatly to the accommodation of the public in every way. This could not well be accomplished unless a uniform tariff were charged, so as to encourage telegraphing between distant towns which would be almost shut out from mutual communication if the charges varied proportionately to the distances. By the Act the rate is *raised* to one shilling for local telegrams, and *lowered* to one shilling for those between distant towns. But the sixpenny or local messages were always few in number. The ratio, in the last year of the Companies' management, was nearly as follows:—160,000 at sixpence, 3,340,000 at a shilling, and 2,500,000 at more than a shilling; so that the rise in tariff will only apply to a very small fraction of the whole number. Moreover the charge for porterage was higher under the old system than under the new, insomuch that the nominally sixpenny telegram generally used to cost a shilling or more. In point of fact, it was rarely possible under the Companies' system, to reckon beforehand the cost of telegraphing. Each Company held itself responsible only for the transmission of messages over its own lines, while a telegram to a small or remote town was almost sure to pass over the lines of more than one Company. All sorts of tariffs were in force on various lines;

generally the shorter the line, the higher proportionately the rate of charge. Thus, a message to Granton cost 3*s*., viz., 2*s*. from London to Edinburgh (400 miles), and 1*s*. for the four miles thence to Granton. In like manner 3*s*. to Bournemouth, viz., 1*s*. from London to Poole, and 2*s*. for the seven miles thence to Bournemouth. To Ireland the charge varied from 3*s*. to 6*s*. for twenty words, 4*s*. 6*d*. to the Isle of Man, 7*s*. to Jersey or Guernsey. There were 475 telegraph stations at which "extra" charges were incurred ; besides 460 railway stations at which a charge of 6*d*. was levied as the station-master's fee. The charges were not only large and unequal, they were difficult to reckon. They were sometimes levied partly on the sender of the message and partly on the receiver, and time and trouble were wasted by the clerks in calculating them. A uniform rate would therefore save money, time, and trouble, and it has been fixed at one shilling. This shilling rate, however, was not and is not regarded as a permanent one. "I fully expect," said Mr. Scudamore," that in the course of two or three years we shall have a uniform charge of sixpence. I have very little doubt that we could afford, if that were the only question, to commence with a sixpenny rate at once. But that rate would bring an enormous increase in the number of messages, and until we know accurately what number of messages we can carry, and what business we can do with the staff, we think we ought not bring that increase of work upon us. This really is the only reason for not charging a lower rate than a shilling." An alternative was proposed, to continue the charge of sixpence for local or town messages and make one shilling the charge for a longer distance, but it was eventually determined to adopt a uniform shilling rate. The way to estimate the real cost of telegraphing is to include porterage as well as the main charge ; if this be done it will be found that the public already benefit by the transfer of the lines from the Companies to the State. The average cost to the public of all telegrams, long and short, distant and near, including porterage, was 1*s*. 7*d*. under the old system ; it is only 1*s*. 1*d*. under the new. But we learn, from a statement made to the House of Commons by the Postmaster-General, in August last (1871), that the Government only await the enlargement of their premises, and the augmentation of their staff and working plant, to adopt a uniform sixpenny rate, to commence some time in 1872, thus fully bearing out the implied promise made by Mr. Scudamore.

The Capital and Working Account.

Numerous other details concerning the practical management of the system would doubtless be interesting but the foregoing pages will suffice to convey a general notion of the subject. The telegraphs have not yet been in the hands of the Government for a sufficiently long period to test either the amount of trade or the balance of profit. There are, however, items of official information

made public from time to time, bearing in various ways on these two questions.

At the end of June last, the National Debt Commissioners had placed in the hands of the Postmaster-General a sum almost exactly amounting to 7,000,000*l.* The sum paid in purchases of existing interests, at that time, amounted in round numbers to 6,380,000*l.*, and in extensions or new works to 620,000*l.* Mr. Scudamore announced that, in addition, a clear half million sterling would be required to complete arrangements already planned, viz., about 235,000*l.* for further purchases from companies, and 285,000*l.* for further extensions. The working of the telegraphs, therefore, after paying all salaries and annual expenses of every kind, ought to leave a net surplus sufficient to pay a due interest on 7,500,000*l.* If it does this, and something more, the nation will decide whether to pay off the borrowed money by a sinking-fund, or to apply the residue to State purposes, as has always been done with the residue of the Post Office receipts. At any rate, strenuous endeavours will be made to insure that the system shall fully pay itself, without imposing any burthen on the taxpayers.

From the very nature of the powers intrusted to the Postmaster-General by the legislature, in regard to the acquisition of telegraphic property, the system grows in magnitude every month. In the autumn of the present year (1871), agreements were in force with twenty-two railway and canal companies for the purchase of their telegraph interests; viz., (in England), the Bristol and Exeter, Bristol and Portishead, Furness, Great Western, London and North-Western, North Staffordshire, and South-Eastern Railways, with the Grand Junction and the Bridgwater Canals; (in Wales), the Glyn Corrwg, Llanelly, Pembroke and Tenby, Rhymney, Swansea Vale, and Taff Vale Railways; (in Scotland,) the Caledonian, Glasgow and South-Western, Great North of Scotland, North British, and Sutherland Railways; (in Ireland), the Belfast and Northern Counties, and the Carrickfergus and Larne Railways. The compensation to fifteen of these companies is partly in cash paid down, partly in annual payments; the other seven companies receive their compensation wholly in annual payments. At the same period negotiations were in progress with other companies, but the terms of compensation were not yet agreed upon; this group comprised the Midland, the Great Northern, the Great Eastern, the London and South-Western, the Chatham and Dover, the North London, the Metropolitan and Metropolitan District, the Lancashire and Yorkshire, the North-Eastern, the Midland Great Western of Ireland, the Dingwall and Skye, and about thirty small companies in various parts of the United Kingdom. There were also new works in course of execution to extend the telegraph system irrespective of any of the companies,—by a submarine cable to Jersey and Guernsey; a submarine cable to the Isle of Man; a new seven-wire cable between England and Ireland; new shore-ends for the cable between Haverfordwest and Wexford; a twelve-wire line to Beachey Head (six to connect with the cable from Beachey Head

to the French coast); additional circuits to connect the great towns of the kingdom; and various reconstructions and reinsulations of existing lines.

In the seventeenth Annual Report of the Postmaster-General, relating to the operations of the year 1870 (although not published till August 1871) a table is given, showing the number of messages (exclusive of press or newspaper messages) forwarded from postal telegraph stations weekly. It commences with February 5th, 187[illegible], (the day on which the transfer to the Government took place), to the end of the year. The figures refer to the weeks ending on the days named:—

February	12	..	140,790	July	30	..	215,448
,,	19	..	135,102	August	6	..	205,302
,,	26	..	143,628	,,	13	..	212,202
March	5	..	147,206	,,	20	..	194,580
,,	12	..	156,566	,,	27	..	189,673
,,	19	..	159,748	September	3	..	189,332
,,	26	..	160,775	,,	10	..	191,183
April	2	..	165,221	,,	17	..	196,710
,,	9	..	162,562	,,	24	..	189,636
,,	16	..	157,807	October	1	..	196,266
,,	23	..	170,659	,,	8	..	197,689
,,	30	..	172,746	,,	15	..	202,389
May	7	..	175,864	,,	22	..	202,460
,,	14	..	180,674	,,	29	..	202,544
,,	21	..	173,040	November	5	..	194,201
,,	28	..	176,811	,,	12	..	1 6,557
June	4	..	191,433	,,	19	..	200,101
,,	11	..	177,533	,,	26	..	193,875
,,	18	..	200,294	December	3	..	186,023
,,	25	..	194,696	,,	10	..	179,104
July	2	..	185,520	,,	17	..	181,636
,,	9	..	192,048	,,	24	..	179,452
,,	16	..	214,419	,,	31	..	144,041
,,	23	..	234,194				

The total amounted to 8,606,732; giving a weekly average of 183,122, or a daily average (including Sundays) of 26,160. Exceptional weeks, producing more than the usual average about that period, were those ending June 4 (Epsom Races), June 18 (Ascot Races), July 16, 23, and 30 (War panic), September 17 (Doncaster Races), October 15, 22, and 29 (Newmarket Races), November 19 (Stock Exchange panic). Smaller than the usual average were the weeks ending April 16 (Good Friday week), and December 31 (Christmas week).

A remarkable proof has been afforded of the increased tendency of the public to avail themselves of telegraphic aid when the means of so doing are brought almost to their doors. At the beginning of 1871, there were nearly as many railway telegraph offices as postal telegraph offices in the United Kingdom, about 1820 to 1960; and yet nearly ten times as many telegrams were sent through the latter as through the former: mainly, it is believed, because the post offices are so conveniently placed in the busiest parts of most towns.

It is not yet certain whether we shall have the accounts of this important department of the Post Office presented to us at the end of each calendar year, or at the end of each financial year

(March 31st); possibly it may be in both forms, to serve various Parliamentary and official purposes. One account, presented in June last, comprises the period from February 5th, 1870, when the lines passed into the hands of the Government, to March 31st, 1871, a little less than fourteen months. In that period the receipts amounted to 1,068,585*l.* for conveyance of messages, private wire rental, special wires, signalling time currents, and miscellaneous sources. But as some of this money was received in respect of collection on behalf of the Submarine Telegraph Companies, and had to be refunded to them, and as there were other drawbacks and allowances of various kinds to be made, the 1,068,585*l.* had to be lessened by 270,005*l.*, leaving 798,580*l.* as the real sum received in regard to the land-wires under the control of the Government. The working expense for earning this sum was 470,000*l.*, made up of salaries, wages, stationery, rent, rates and taxes, fuel and light, way leaves, pole rents, engineering, maintenance of plant, and miscellaneous charges. Mr. Scudamore claims that these figures justify the opinion that he has from time to time expressed concerning the eventual profitableness of the telegraphs under Government management. In July, 1869, in a paper addressed to the Marquis of Hartington, he estimated the telegraph revenue, in the first year, at 673,838*l.*; this agrees very closely with the ascertained fact—798,585*l.*, for fourteen months, being a trifle in excess of 673,838*l.* for twelve months. Again, in January, 1871, when the fourteen months were about three-fourths expired, he said,—"I shall be able to show that the department is on the very eve of fulfilling all its promises to Parliament and the public; and that if its progress up to the present time has not appeared to keep pace with the expectations of the public, it has been, at least, as rapid as the circumstances in which we have been placed would permit. I shall be able, however, to show that, even in the first year of our operations, we shall very nearly obtain, if we do not actually obtain, the estimated gross annual revenue; that this gross annual revenue must inevitably grow larger from year to year; that though, in the first year of our operations, our estimates for cost of construction, re-construction, and maintenance, will, for reasons to be described, be exceeded, the normal proportion of expenditure to revenue will not hereafter differ from that given in previous estimates; and that the financial results of the completed scheme will not be less favourable than those which I have all along predicted for it." Mr. Scudamore, in June, 1871, drew attention to the fact that his anticipations of July, 1869, and January, 1871, had been virtually realized, so far as concerns the gross earnings of the lines. The working expenses had been higher than he expected. This he accounted for "because we have made extensions of our scheme which we did not contemplate when the estimate was made; and because at the outset of our operations, when a large portion of the staff were but imperfectly trained, a more than normal cost had to be incurred, in order to provide adequately for

the work." As, moreover, the gross receipts of 1871 have been 25 to 35 per cent. more than those of the corresponding weeks of 1870, with only a relatively small increase in the working expenses, it may be fairly stated that the *net* profits are steadily increasing. In round numbers it was calculated that in the first fourteen months the telegraphs earned a good 10 per cent. on a capital expenditure of 7,500,000, leaving, at 58 per cent. working expenses, enough net profit to pay interest; hence the hope and belief that the system will yield a surplus by and bye.

GEORGE DODD.

THE LARGEST BOOK IN THE WORLD.

NOTES ON THE SPECIFICATION OF BRITISH PATENTS 1617–1869.

IF the most learned bibliomaniac were asked what was the largest book ever published the chances are very great that his answer would be erroneous. Living amongst the tomes of ancient days, dreaming of "Wynkyn's unique, and Caxton's uncut," the question would probably bring to his memory that monument of Dutch perseverance, the "Galerie Agreéable du Monde," of P. van der Aa, which extends to sixty-six large folio volumes, or that wonderful Companion to the Almanac which Bollandus commenced in 1643, and which has even now only dragged its slow length along to the month of October although it fills fifty-six volumes. Some periodicals might occur to him. A set of the "London Gazette" from 1667, to the present time makes a moderately imposing show, and the "Gentleman's Magazine," with its 233 volumes, is by no means to be despised. But it is not likely that the bibliomaniac would be able to give a correct answer, for the book belongs too much to the workaday world to have fallen under his notice. The largest literary attempt the world has so far seen, is the "Specifications of Patents for Invention," published by the authority of the Commissioners of Patents, and under the editorial care of Mr. Bennet Woodcroft, F.R.S. This work is still in course of publication, and about ten fasciculi of it appear every day, or between three and four thousand each year. Each specification forms a pamphlet stitched in a blue paper cover, varying in thickness according to the length of the description of the invention, and to the number of engravings with which it is illustrated. Some consist of a single leaf enclosed in the blue covers, others are as large as a good sized volume. The largest is that taken out by Thomas Dunn in 1862 (No. 751). The description of this invention for 'Improvements in the Construction of Bridges, Roofs, Houses, and other structures' fills thirty-six pages, and is illustrated by 104 large folio sheets of drawings, forming when bound four good sized volumes.

250 copies are printed of each specification ; this particular one entailed the payment to printers and lithographers of £423. The total number of specifications (from A.D. 1617 to December 31, 1870), is 72,586. When bound they make 2,533 thick volumes of an imperial octavo size. The cost of purchasing a set (and they are sold at about cost price) would be 2,448*l*. A work of this extent would manifestly be useless without indexes. Mr. Woodcroft has supplied it with the necessary apparatus, in the shape of chronological, alphabetical, subject-matter, and other indexes extending to sixty volumes. These keys will enable the searcher to discover any patent he may wish to see if he knows its subject, the name of the patentee, or the date when it was taken out.

Recently the Commissioners have added to their publications a weekly 'Chronological and Descriptive Index,' in which abridgments of specifications are printed as fast as the term of secrecy expires, together with continuous indexes of persons and subjects. This is perhaps the most important of all their publications, for it contains the latest record of all improvements. By its use, the inventor may learn whether some more fortunate individual has already anticipated his discovery, and the intelligent manufacturer on the look out for improved processes may see what the inventive talent of the country has to offer him. This index is the result of a suggestion of Peter Spence, Esq., F.C.S., who, in a memorial which received the signatures of some of the most eminent scientific men and manufacturers of the day, pointed out the advantages likely to arise from the public having immediate access to these specifications, formerly almost inaccessible, since the Subject-Matter Index, without which they are a "wildering maze," was always six to eighteen months in arrear.

It is to be regretted that it was thought necessary to create a special serial for these abridgments instead of inserting them in 'The Commissioners of Patents' Journal,' which is published twice a week and contains notices of applications for letters patent, and of the various stages through which the patent has to pass. Thus the Patent Office has now virtually three organs per week, and the manufacturer who would be "well posted" must of necessity go through every issue. When, in addition to this, it is remembered that there are no regulations whatever to control patentees in drawing up the abridgments, and that consequently large numbers of them are entirely worthless, it will be evident how seriously the utility of the new weekly index is impaired. The Commissioners' Journal, as a weekly issue combining the three present publications, might, we think, be made to contribute in no mean degree to the increase of technical knowledge, and the willingness which the Commissioners have so far exhibited to listen to outside suggestions for improvements makes it the more incumbent on all who have studied the subject to offer them. The Patent Office has a large revenue arising from a tax on invention ; there is, therefore, a fair claim that any surplus

should be devoted to the increase and diffusion of technical knowledge.

Copies of the British Patent Office publications are liberally distributed to Foreign and Colonial Governments, and similar works are received in return. The *titles* of these foreign patents are printed in the "Journal," but of what use is a bare title? *Noblesse oblige.* From those who have already done so well, we desire still more. All these foreign specifications should be translated, and in an abridged form, printed in the Commissioners' 'Journal.' This should also contain abridgments of all British patents, and full indexes which would render it possible to dispense entirely with the publication of the indexes now issued in separate and costly volumes. The Commissioners' 'Journal' would then become the most important technological publication in existence, and would be a guide to the inventions and improvements in the industrial arts throughout the civilized world. We do not here pronounce any opinion as to the advantages of the appointment of "Scientific Examiners of Patents" in common with a largely reduced scale of fees, recommended in so many quarters as a remedy for the gravest evils of our existing system; but, assuredly, we think no agency could be so valuable, as the comprehensive epitome we have described, in *educating* the British manufacturer and informing the intending patentee as to the relative novelty and value of his claim.

The indexes having become so numerous and costly as to render their purchase inconvenient or impossible to many persons who would desire to possess them, it was decided to issue abridgments of the specifications, arranged in distinct classes and capable of being compressed into one or two duodecimo volumes. This series is one of the happiest ideas of the Commissioners. The volumes are compact, handy, and cheap. Some of them contain brief introductions, in which the history and archæology of the subject are set forth, not indeed, with any great amount of independent research, but intelligibly and intelligently, although the sources of the information are very obvious.

Our patent system, as such, dates from 1617, although a few earlier ones exist. Since that date nearly all the important, and very many of the unimportant, changes in every department of technology, have been the subject of one or more patents. Most important documents illustrative of industrial progress are included in the series.

Industries which have arisen since the reign of James I (and, thanks to steam, electricity, &c., they are numerous) have almost their entire history recorded in these blue books, and of those trades which were already flourishing when the Scottish Solomon ascended the throne, the record, if less complete, is equally curious and interesting. Whenever the real history of Great Britain comes to be written, the record of the daily workaday life of the people, of the succession of endeavour, failure, and success, which has gradually raised them from the rude insignificance of the past to the power and civilization of to-day—will

have to be gathered in a great measure from the work of which we are now speaking. It covers the most brilliant period of our commercial and manufacturing career, and is a record of British inventive genius for more than two centuries.

The chronicle is not unblurred, folly often and knavery sometimes have found a place upon it. Yet on the whole it is a record of which we may be proud. It bears testimony to many years of honourable toil, of undaunted perseverance, of wrestling with nature for the possession of her secrets, and the result we have in the thousand appliances for the ease and comfort of man which make up the material side of our civilization. Writers in former volumes of the 'Companion to the Almanac' have explained the British system of patents, and we have no intention of again going over that well-worn ground. Our purpose is much more limited, and it is only necessary for us to say that under the old Patent Law, which was not amended until 1852, a single patent might cover a number of distinct inventions, and that although under the amended law the patent covers only one invention, yet that invention may be applicable to a number of distinct purposes.

In the following tabular statement we adopt the classification used in the subject-matter Index, and show the number taken out under the old law, a period of 235 years; the number taken out under the new law to the end of 1869, a period of 17 years, and finally the total number of patents applicable to each class.

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Accidents (prevention)	226	1,121	1,347
Acids and vinegar	78	238	316
Adhesive substances	67	..	67
Advertising	..	81	81
Aërating	46	168	214
Aërial machines	7	84	91
Agriculture	313	1	314
,, produce	305	..	305
Air, gas, and wind engines	162	529	691
Air supplying	..	3,773	3,773
Alarms	35	35	70
Anchors	..	13	13
Alkalies	84	687	771
Alum	..	30	30
Alkaline lees	33	..	33
Ammunition carts	..	1	1
Artificial flowers	..	30	30
Anchors	..	142	142
Artificial stone	..	3	3
,, ivory and wood	..	24	24
Assurance	12	..	12
Ashpans and pits	..	5	5
Axles, shafts, &c.	..	926	926
Bags, baskets, &c.	..	21	21
Balconies	..	1	1
Banners	..	1	1
Baths	24	204	228
Bayonets, sabres, &c.	..	75	75
Beer engines	..	8	8

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Bell-hanging	6	103	115
Belts, braces	..	181	181
Bill-holders	..	34	34
Billiard tables	..	39	39
Bird cages	..	14	14
Beehives and beeswax	..	8	8
Blacking	5	4	9
Bleaching, &c.	116	186	302
Bobbins and cop tubes	..	165	165
Boilers	247	..	247
Bookbinding	..	77	77
Bones, ivory, &c.	..	68	68
Bonnets	..	21	21
Books, albums, &c.	..	219	219
Boots and shoes	97	808	905
Boreing, drilling, gimlets, &c.	48	715	763
Bottles and jars	70	635	705
Boxes, trunks, &c.	..	534	534
Bread, biscuits, and pastry	..	214	214
Breaks, skids, and buffers	..	456	456
Brewing	320	545	865
Bricks, tiles, &c.	..	680	680
Bridges	55	311	366
Brooches, bracelets	..	5	5
Brushes and brooms	26	265	291
Building, plastering	258	804	1,062
,, processes	398	...	398
Buoys, marine lights, &c.	..	195	195
Buttons, buckles, &c.	..	495	495
Calculating, educational apparatus	16	56	72
Caltrops	..	1	1
Camphor	..	3	3
Canals	..	2	2
Candles, tapers, wicks	185	270	455
Cards, tablets	..	65	65
Carriage of letters	..	12	12
Carriages, cabs, &c.	..	1,207	1,207
Cartouch boxes	..	1	1
Cartridges and cases	..	523	523
Casks and barrels	33	296	329
Casting and moulding	67	811	878
Casting and plastic materials	..	585	585
Cement and plaster	..	348	348
Cemented and flocked fabrics	..	285	285
Chains, &c.	39	295	334
Charcoal, coke, carbon	..	314	314
Chenille	..	30	30
Chemical compositions, &c.	261	..	261
Cheques, check books, bank notes	..	77	77
Chimney-pieces	..	13	13
Chlorine and chlorides	3	87	90
Chess	..	5	5
Churns, milk cans, &c.	..	153	153
Cigars	..	15	15
Cisterns, tanks, &c.	..	268	268
Clocks, watches, timekeepers	142	478	620
Cloth	315	..	315
Coaches	586	139	725
Coal boxes	..	1	1
Coating, covering, plating, &c.	..	1,916	1,916
Coats	..	7	7
Coffee, cocoa, tea	35	195	230
Coffee pots	..	18	18
Coffins, tombstones	..	119	119
Coins and medals	..	68	68

	Old Law, 1617 to 1852	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Coke	..	33	33
Combs	8	52	60
Colouring, marbling, &c.	..	27	27
Compasses, measuring instruments	..	239	239
Concentrating by evaporating	..	8	8
Condensing	53	935	935
Confectionery	..	78	78
Cooking apparatus	48	396	444
Cooking, making bread	20	..	20
Covers for coal-holes	..	1	1
Cornices and mantel-pieces	..	16	16
Cork cutting	25	114	139
Conveying letters and goods	..	3	3
Copying, writing	..	114	114
Crates	..	3	3
Cutting, sawing, planing	297	1,416	1,713
Curling hair	..	1	1
Cutlery	69	212	281
Cricket bats	..	7	7
Cylinders, rollers	88	1,107	1,195
Decomposing	..	1	1
Dentistry	..	135	135
Deodorizing, perfuming, &c.	..	242	242
Diving	27	21	48
Destroying rats	..	54	54
Dishes	..	33	33
Distilling	..	674	674
Diving bells	..	3	3
Docks	..	304	304
Doors	..	444	444
Drawing	52	44	96
Draining lands	..	386	386
Dramatic and scenic effects	..	30	30
Dressing	..	22	22
Drying	..	945	945
Dust pans	..	5	5
Dyeing	227	499	726
Dyes	..	445	445
Earthenware	1,048	389	1,437
Edible substances	..	4	4
Electricity	38	972	1,010
Elastic bands	..	20	20
Embossing	66	298	364
Electro-plating	..	140	140
Enamelling	..	138	138
Engraving	36	222	258
Envelopes	..	164	164
Excavating	..	253	253
Extinguishing flame	..	3	3
Extracts and decoctions	32	115	147
Exercising apparatus	..	4	4
Fabrics, elastic fabrics	..	371	371
Farm processes	25	..	25
Farriery	..	36	36
Fences, Lattice	..	34	34
Feathers	..	8	8
Felt	..	13	13
Fences and railings	..	67	67
Files and clips	..	119	119
Fibres	..	778	778
Filing papers	..	2	2
Filtering	109	443	552
Finishing woven fabrics	..	835	835
Fishing	16	60	76
Fire-places	452	530	982

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Fire arms	..	1,877	1,877
Fire engines	..	331	331
Fireworks	..	5	5
Fleeces	..	1	1
Flues and chimneys	..	571	571
Food for cattle	..	292	292
Fountains and jets of water	..	6	6
Fortifications, batteries	..	400	400
Frames	18	..	18
Fruit cleaning, &c.	..	88	88
Friction	35	..	35
Fuel, cleansing coal, &c.	129	366	495
Fulling and felting	..	229	229
Furnaces and fire boxes	..	2,099	2,099
Furniture, bedsteads	206	871	1,077
Gaiters	..	7	7
Games and exercises	29	123	152
Garden pots	..	9	9
Gas, gasometers	269	822	1,091
Gas burners	..	630	630
Gassing fabrics, and yarns	..	2	2
Gauges, safety plugs	..	478	478
Glass, liquid silex	117	589	706
Glass applied in manufactures	..	65	65
Gloves	..	141	141
Glycerine, glucose	..	4	4
Gold beating	..	2	2
Governors and indicators	..	808	808
Graining	..	2	2
Grinding corn	231	450	681
Grinding and crushing, and minerals	..	344	344
Grinding and sharpening	..	457	457
Guides for machinery	..	373	373
Gunpowder	..	176	176
Gutta-percha and India-rubber	218	340	558
Gutta-percha applied in manufactures	..	1,927	1,927
Gutters, stench traps	..	3	3
Hair dressing	..	124	124
Hammers	..	206	206
Harness, saddles, bits	..	420	420
Hatching, breeding, rearing	..	12	12
Hats, caps, bonnets	..	502	502
Hearses	14	..	14
Heating and evaporating	373	2,083	2,456
Hinges and pulleys	43	27	70
Hoists, cranes	124	839	963
Hooks and eyes	..	2	2
Horn, ivory, &c.	..	22	22
Horse and waggon cloths	..	3	3
Horse shoes	..	177	177
Horticulture	26	285	311
Hothouses, greenhouses	..	22	22
Hurdles and fences	..	39	39
Hydraulic rams	..	1	1
Inks and inkstands	..	163	163
Inlaying; inlaid work	..	80	80
Invalid bedsteads	..	9	9
Insects and vermin destroying	..	15	15
Iodine	..	5	5
Japanned ware	..	9	9
Jet	..	1	1
Jewellery, lockets, &c.	..	191	191
Joiners' braces	..	1	1
Joining, pipes, railway couplings, &c.	..	1,234	1,234
Jugs and basins	..	7	7

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Kettles and pans	..	6	6
Knapsacks and pouches	..	8	8
Knives, forks, spoons	..	41	41
Lamps, lanterns	..	1,250	1,250
Landing stages	..	3	3
Leather skins and hides	..	559	559
Letters, inscriptions, &c.	..	14	14
Lettering on glass	..	11	11
Lighthouses	..	7	7
Light and lighting	404	..	404
Lighting fires	..	12	12
Lint	..	3	3
Locks, latches, and fastenings	110	545	655
Looking-glasses	..	127	127
Manganese	..	10	10
Mantelpieces	..	24	24
Mangling, ironing, &c.	35	229	264
Mantles	..	1	1
Manure, treating sewage	55	482	537
Mangers	..	3	3
Maps and charts	6	58	64
Mariners' compass, &c.	..	2	2
Matches, fuses	..	222	222
Mathematical instruments	88	..	88
Masts, gaffs, and booms	..	7	7
Measuring length	..	354	354
Measuring progress	167	188	355
Medical treatment	275	109	384
Medicines	..	376	376
,, for animals	..	1	1
Memorandum recorders	..	2	2
Metallic salts	..	299	299
Metals	837	5,380	6,217
Meters for gas	..	477	477
Mincing meat	..	3	3
Mining, boring, &c.	81	702	783
Mixing, mashing, &c.	..	237	237
Motive power	1,019	3,214	4,233
Mole traps	..	1	1
Mouldings	41	192	233
Muffs, boas, &c.	..	1	1
Musical instruments	273	547	820
Neckties	..	..	..
Nails, and screws, and spikes	141	681	822
Needle cases	..	8	8
Navigation, ship building	851	...	851
Naphtha	..	64	64
Nautical instruments	..	22	22
Numbering	..	5	5
Nut crackers	..	1	1
Oil cloths, floor cloths	..	215	215
Oars	..	1	1
Oils and oiling	134	796	930
Oils from seeds	..	406	406
Oils of tar, bitumen, &c.	..	357	357
Optical instruments	40	217	257
Orreries	..	1	1
Ovens and kilns	..	465	465
Oxidation and incrustation	33	370	403
Packing and pressing	54	51	105
Paints	..	89	89
Painting, colouring, varnishing	149	588	737
Paper and pasteboard	244	1,236	1,480
Paper-stamps	..	3	3
Papier-maché	24	5	29

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Paperhangings	..	17	17
Paving and road making	125	242	367
Pearl, ivory, horn	8	..	8
Peat	..	119	119
Perukes or wigs	7	2	9
Pens, penholders	..	275	275
Perfumery	..	19	19
Petticoats, skirts, stays	..	524	524
Phosphorus	..	3	3
Photography	..	435	435
Pictures, portraits	..	238	238
Piers, breakwaters	..	5	5
Pile driving	..	72	72
Pigeon shooting	..	1	1
Pillars, columns, &c.	..	270	270
Pins and needles	44	168	212
Pipes, tubes, &c.	214	1,314	1,528
Pistons and piston's packings	..	441	441
Plants, trees, &c.	..	154	154
Playing cards	..	2	2
Plates, dishes, &c.	..	54	54
Ploughing, digging, &c.	..	782	782
Portmanteaus, trunks, &c.	..	25	25
Preserving wood, stone, &c.	86	340	426
,, food, bacon, &c.	..	527	527
Presses, packing, &c.	..	854	854
Printing	462	1,487	1,949
Propelling, driving, &c.	..	4,117	4,117
Pulleys	..	7	7
Pumps and pumping	..	1,171	1,171
Punching	..	8	8
Purses and fastenings	..	97	97
Quartz and ore crushing	..	101	101
Railway carriages	632	2,622	3,254
,, tickets	..	1	1
Rags and waste	..	284	284
Raising sunken ships	..	39	39
Reading	..	1	1
Reaping and mowing	..	548	548
Reflectors for lamps	..	7	7
Refrigerating	40	..	40
Resin, pitch, &c.	..	110	110
Retorts and crucibles	..	287	287
Rigging and blocks	..	4	4
Rings and lockets	..	11	11
Rockets	..	13	13
Ropes, cordage, twine	91	245	336
Ruling	..	2	2
Sadlery and harness	147	..	147
Safes and tills	8	15	23
Saucepans and kettles	..	14	14
Salt and saltpetre	86	89	175
Salts and lime	..	1	1
Screens	..	10	10
Sewing and embroidering	37	793	830
Screws	..	27	27
Sepulchral monuments	..	13	13
Sewers	..	52	52
Scents, essences	..	4	4
Shearing sheep	..	40	40
Ship building	..	1,551	1,551
Ships' boats	..	66	66
Ships' logs	..	3	3
Ships' cargoes, ballasting, &c.	..	3	3
Ships' rigging	..	196	196

	Old Law, 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.	Total.
Shirts, collars, &c.	..	296	296
Shovels and ashpans	..	8	8
Shop fronts	..	4	4
Shot, shell, bullets	..	470	470
Show cases, exhibiting goods for sale	..	180	180
Sifting, sorting, &c.	..	413	413
Signs, street-names	..	6	6
Shawls	..	5	5
Signals, alarms	..	1,283	1,283
Singing pigs	..	15	15
Sizing, warping	..	318	318
Smoke prevention	520	1,213	1,733
Snuffers	..	5	5
Soap manufacture	97	310	407
Sounding depths of water	..	8	8
Sowing seeds	..	198	198
Spindles and flyers	..	292	292
Spheres	..	1	1
Spinning, preparing	1,119	3,036	4,155
Spittoons	..	2	2
Spades and shovels	..	1	1
Sponge	..	10	10
Spoons and ladles	..	3	3
Springs	102	476	578
Stables, cattle stalls	..	73	73
Stationery	161	..	161
Stamps and stamping	..	349	349
Starch, size, &c.	..	260	260
Statuary, sculpture, &c.	..	27	27
Stays	..	29	29
Steam boilers	..	2,367	2,367
Steam engines	1,081	2,116	3,197
Steering or guiding ships	..	439	439
Stone, slate, and marble	111	470	581
Storing, stacking, &c.	..	19	19
Straps, bands, and belts	..	274	274
Submarine tunnels and works	..	5	5
Sugar and syrups	187	444	631
Sulphur	16	91	107
Surgery, surgical	..	212	212
Surveying, levelling	..	16	16
Sweeping	..	24	24
Swimming belts	..	69	69
Swords and bayonets	..	17	17
Tablets and window price tickets	..	4	4
Taps	146	..	146
Tanning and preserving	241	..	241
Tags	..	79	79
Tar	52	25	77
Tea and coffee pots	50	11	61
Tea trays	..	4	4
Telegraphs and signals	107	920	1,027
Testing the strength of materials	13	77	90
Telescope	..	1	1
Thermometers, barometers, &c.	22	173	195
Thimbles	..	4	4
Thrashing, winnowing, &c.	..	698	698
Thread of India-rubber	..	2	2
Threads and yarns	..	134	134
Trinkets and jewellery	..	2	2
Tobacco and snuff	37	356	393
Treadwheels	..	1	1
Toys	..	138	138
Tools	65	..	65
Trousers, drawers, &c.	..	14	14

	Old Law 1617 to 1852.	New Law. (Oct. 1852 to Dec. 1869.)	Total.
Trays, dinner plates, &c.	..	35	35
Trusses	..	6	6
Turning lathes	31	199	230
,, over leaves of books	..	2	2
Tunnelling	25	2	27
Typefounding	..	35	35
Trunks	19	..	19
Umbrellas, parasols, &c.	47	332	379
Upholstery and feathers	80	447	527
Valves, taps, plugs, &c.	..	1,783	1,783
Vases	..	30	30
Velocipedes	..	104	104
Ventilation	81	717	798
Vices, screw keys	..	131	131
Voting, ballot boxes	..	6	6
Waggon covers, &c.	..	15	15
Washing, rinsing materials	..	545	545
Washstands	..	9	9
Water and other fluids, application, &c.	570	..	570
Water-closets	60	331	391
Water-supply	..	371	371
Waterproofing	95	438	533
Weapons of defence	471	..	471
Water wheels	..	431	431
Wax	..	1	1
Wearing apparel	228	392	620
Weaving, braiding, &c.	1,058	3,951	5,009
Weighing machines	64	169	233
Wheels for coaches	..	633	633
Whips	..	8	8
Wheels for machinery	..	364	364
Winding, reeling, &c.	63	341	404
Window blinds	..	264	264
Windows, sashes	..	426	426
Wine, cider, perry	..	18	18
Windmill sails	..	2	2
Wire working	40	576	616
Wood and veneers	121	371	492
Writing and reading desks	43	10	53

Mr. Woodcroft has introduced changes into his own classification which sometimes prevent comparison between the two periods; still an examination of these tables will reveal some curious facts. The relative numerical proportion of the different classes is not without interest, as it shows, to some extent at least, the nature of the problems which have most excited the attention of inventors. It is perhaps also a test by which the existence of knotty problems may be indicated.

With 1347 patents for the prevention of accidents there would seem to be no necessity for the maiming and killing which is so common in our streets, railways, and workshops.

Surely the "great unwashed" should, even though Ethiop dark, have been made clean by 228 patent baths. It is a proverbial assertion, not always realized, that new brooms sweep clean, but here are no less than 291 patent brushes and brooms offered for the matron's choice, and all of them warranted to have a furious animus against dust and dirt.

With 495 patent buttons, surely the old difficulty under which the Paterfamilias of "Punch" so often laboured ought to have become a thing of the past.

Forgery is chiefly guarded against in the patents for cheques and bank-notes, one of the latest being an American device for preventing alteration of values in monetary instruments. Mr. Berolzheimer proposes to remove perforated portions of the cheque in definite proportions, according to its amount.

Time-keepers of all classes, watches, clocks, &c., with their usual appendages, are treated of in 620 specifications. In this class we find a proposal for a revolution in our method of measuring time. This invention (No. 2073 for 1869) for which a patent was refused, belongs properly to the class of paradoxes which the late lamented Professor de Morgan was so fond of showing up. It is an attempt at squaring the circle.

The British public, we learn from another of these documents, highly appreciates the performance of athletes, and prefers those exhibitions which are attended with the greatest amount or appearance of risk. This seems rather hard on the poor acrobat, who daily carries his life in his hand, and risks it with a courage which in a noble cause would be heroic. An inventor proposes to sole him with iron and let him walk in safety head downward on a brass ceiling connected with a powerful electro-magnet. (No. 447, 1869.)

Ladies and pugilists will no doubt be grateful for the thoughtful patentees who have devised 141 inventions relating to gloves.

Fifteen patents aimed at the lives of "insects and vermin" must carry terror into the ranks of the parasitic tribes, if they are students of such rolls. What would a conference of flies and field mice think about this branch of industry?

"There is nothing like leather," says the old proverb, an assertion which will not be endorsed by the makers of artificial leather. 559 inventions for the real and artificial article show its importance.

The Chancellor of the Exchequer will no doubt be interested to learn that matches and fuzees, for which he has exhibited so tender a regard as a means of increasing the revenue, have been the occasion of 222 patents. Let us hope that the inventors have been more successful than Mr. Lowe in deriving *ex luce lucellum*.

Six patents for voting apparatus are probably the result of the discussion of the ballot question.

Firearms have scarcely progressed since their first introduction, or at all events only in recent years. It is equally noticeable that many of the so-called new implements of destruction are really old stagers, modified perhaps in detail, but substantially the engines of two centuries back.

Drummond, of Hawthornden, had a comprehensive patent in the reign of Charles II for various military engines, and amongst them was "a machine made, as it were, of musket barrels fastened together, by the aid of which any single soldier may be

considered able to fill the place of a hundred musqueteers." This machine, he adds, "may from its effect be called ἁρμα κεραυνον, or lightning chariot," in the vulgar tongue "fyerie waggon."

Was Colt's six-shooter anticipated in Drummond's instrument, by which a single man could be of no less avail in battle than five or six with the ordinary weapons?

The inventor speaks as if this engine were actually in use; it was called by different names as its size varied, although the principles of its construction are unaltered. "Box-pistoll," and "muskett-box," are amongst the titles he gives.

The first English patent relating to fire-arms and accoutrements is one for a new description of powder and shot flasks granted in October, 1592. In 1607 the famous Marquis of Worcester had a grant for making and working saltpetre and gunpowder in England.

Puckle, the author of that curious book "The Club," took out a patent in 1717 for a portable gun or machine called "Defence," which consisted of a single barrel and a rotating chamber piece. The chamber piece contained six or more divisions for charges, and when exhausted it could be unscrewed and replaced by one fully loaded. Puckle also provided means whereby round bullets might be shot against Christians and square ones against the Turks.

In 1721 Isaac de la Chaumette invented a breech-loader, which was cooled by charging and cleansed by firing.

Manton's name first occurs in 1792, in connection with an improved hammer, the first of a long series of patents which have made his name famous amongst gunners.

Howard's fulminating mercury was described to the Royal Society in 1800, and in 1807 the Rev. Alexander John Forsyth patented the percussion lock. His patent was unsuccessfully disputed on the ground of prior use. Its private use by others appears to have been proved, nevertheless his patent was sustained.

In reading the details of some of Howard's experiments it seems remarkable that this use of his discovery did not occur to him, yet we find him remarking that it was "pretty plain that no gun could confine a quantity of the mercurial powder sufficient to project a bullet with a greater force than an ordinary charge of gunpowder."

Shrapnel shells, so named after their inventor, do not appear until 1834.

In 1831, Moser took out the first English patent for the now famous "needle" gun.

Reaping-machines early received the attention of the Commissioners who issued the specifications relating to them before they undertook the gigantic task of printing all the "old law" specifications. To this work was added an appendix by Mr. Woodcroft, in which he sketched the history of "agricultural cutters," from the Egyptian sickle down to those patented in 1853.

The first notice of a "machine" for reaping is in Pliny. It

was an instance of the utility of sometimes putting the cart before the horse, for it consisted of a van, somewhat resembling a modern wheel-barrow, armed with projecting teeth in front, and worked by an ox yoked in the shafts behind with his head turned towards the cart. Rude as was this "expeditious manner of reaping," as it is styled by Palladius, it fell into disuse in the middle ages, being superseded by that symbol of Ceres which is almost the oldest of agricultural instruments.

In 1780 the Society of Arts offered a prize, which led to the reconsideration of the instrument just described, and to a discussion as to its adaptation to modern wants. The first English patent for a corn-cutter was granted to Joseph Boyce in 1799. The Rev. Peter Bell's invention was the first considerable improvement, and many of those now in use are based upon it. An earlier one, invented but not patented by Henry Ogle, which was also on the reciprocating and advancing system, had to be abandoned, the labourers threatening to murder the man who had manufactured this metal reaper. In most of these patents the influence of the classical machine is easily perceptible. Even in our own days of reaping by steam the use of the sickle is far from being entirely superseded.

Perpetual Motion is a rock on which many mechanical geniuses have been wrecked. It possesses an unaccountable charm for some person who expend in the visionary search an amount of patience, and often ingenuity, which turned in more common sense directions would not fail of reward. The first English patent for perpetual motion was granted in 1630 to David Ramseye, for an invention whereby he hoped "to make any sort of mills to goe on standing waters, by continuall mocion, without the helpe of winde, water, or horse." No description accompanies the patent. That there are still would-be discoverers of the secret may be gathered from the following verbatim copy of an application received at the Patent Office in London :—

"Her Majesty the Queen Victoria,
"Patent Office, London.

"Your Majesty we humbly advertise that we find out the 'Perpetual Motion' a machine very singular in its construction, but the same time very important by the power it gives.

"We intend to secure ourselves the patent right for the United States, and as we are informed your Majesty has secured a reward for the inventor, we respectfully ask your Majesty if we may come to show our invention?

"To prevent mistake we humbly beg not to believe any person, without having the original Patent of the United States, and the copy of this Letter.

"Very respectfully,
"KRAUSE & ROTMAN.

"Milwaukee, Wisc, United States,
"January 28, 1859."

We take this letter from Dr. Henry Dircks' comprehensive

work on the Perpetuum Mobile, where many other curious details of mechanical eccentricity may be found. The subject is not yet exhausted. Miss Berry in 1784, went to the Palazzo Altieri at Rome, where she saw a machine for perpetual motion, with two balls. She adds "I understand its principle but cannot describe it." In the Memoirs of Peter Henry Bruce, we read of a Mr. Slitter, an architect in the service of Peter I, who killed himself by intense study in endeavouring to contrive a perpetual motion. Bruce gives a description of the machine, but less fortunate than Miss Berry, we find this, like many other similar contrivances, to be simply incomprehensible. Not the faintest shadow of real success has ever gladdened the heart of the modern searcher after self-motive power. Thousands of pounds and hundreds of years have been devoted to the task, and no man has ever been able to accomplish it. The results which the Marquis of Worcester expressly declares himself to have attained two centuries ago have never been realized by any subsequent experimentalist. That perpetuum mobile is impossible would perhaps be too much to say; that it would be a mere useless toy is much more certain. Our prime movers have greater power than any perpetual motion ever dreamed. The search, however, has not been wholly in vain, for those who have flown so high have sometimes by chance hit upon humbler devices calculated to be of public benefit.

Next to the search for the perpetual motion the study which has been prosecuted with least success, perhaps, is that of Aëronautics. A certain French politician and manufacturer, notable for his views on the subject of Invention is of opinion that the man who propounds a mechanical problem is the real inventor and not the man who solves it. When once a person is clever enough to find out that it would be a good thing to have a machine to do some piece of work, the "next practical man" he meets will tell him how to make it. M. Schneider's practical man is, like Macaulay's schoolboy, a marvel of cleverness, but there is one question which he has not answered yet, and that is "How can the air be navigated?" Icarus thought himself a practical man—with disastrous results. Equally unlucky was Giovanni Battista Dante, an Italian, who about 1650 is said to have lost his life in an attempt at mechanical flight near Perugia.

Aëronautics occupy one of the volumes of the Abridgments. The slight historical sketch prefixed is by no means exhaustive of the very curious topic of which it treats. Lana's invention is not recorded, although it is one of the earliest efforts of the kind.

The sixth chapter of his "Prodromo" (1670), is devoted to describing how to "Fabricare una naue, che camini sostentata sopra l'aria a remi, e à vele: quale si dimostra poter riuscire nella prattica." The author laments that his religious poverty had not allowed him to try the experiment himself. Though quite impracticable his plan has not been without adherents.*

* See 'Mechanics' Magazine,' iv, 289.

None of our English patents belong to this pre-scientific period, the first bearing date 1815, long after the ascents of Pilatre de Rozier and the Marquis d'Arlandes had made clear the possibility of rising in the world by means of balloons. None of the various devices for aërial machines to act by mechanical means have, so far, been successful. Viscount Carlingford's anticipation that, "like the chariot of Jupiter," his patent aërial chariot might hereafter be drawn by two trained eagles has not *yet* come to pass. Wings and tails have so far been found impracticable. Perhaps the most curious of the specifications relating to aërial conveyances is that of Mr. R. B. Boyman (No. 3,262 for 1866), which is really a somewhat comprehensive treatise on the state of aëronautical science at that date. Mr. Boyman proposes that we should sail through the air in a car, or saloon, dependent from a gaseous envelope of cylindrical shape, with conical bases, propelled by jets of steam and hot air, acting in equivalent or other reaction tubes, and steered by side rudders or reaction tubes. Notwithstanding the elementary state of the art ballooning has been turned to considerable practical use for scientific and military purposes. Gambetta is probably the first dictator who dropped out of the clouds. It may be hoped that the increased attention to the study of air-navigation by the *savants* of France during the late war will lead to many practical improvements. Ninety-one patents for aërial navigation ! and still the poet's vision has not been realized, that prophetic rapture wherein he—

> "Saw the heavens fill with commerce, argosies of magic sails,
> Pilots of the purple twilight, dropping down with costly bales."

Pins were not the subject of a patent before 1795, although they appear to have been manufactured in England since 1543, when their form and make was regulated by statute. The importation of foreign pins was prohibited in 1483. No student of political economy will forget Adam Smith's famous reference to the advantage of the division of labour in the "trifling manufacture" of pins. The progress of invention has now made it equally remarkable as an instance of the benefits of machinery, for the hand-made pins are superseded by articles which, with the exception of colouring and polishing, are made in one machine. The first attempt at superseding hand labour was made by Samuel Willman Wright, a native of Massachusetts, who came to London and patented his invention in 1824. Owing to the failure of the company by which they were to have been made, it was not until 1833 that solid-headed pins were introduced to the British public. It is somewhat singular to find that in 1817 Seth Hunt patented a machine for making pins "with a head, shaft, and point in one entire piece." This was a communication from a "certain foreigner residing abroad." Even the placing of the pins on the sheets of paper in which they are sold is performed by highly ingenious and complicated machinery.

Needles are of high antiquity, and are said to have been first made here by a Spanish negro in the reign of Queen Mary. It was not until 1650 that the trade appears to have been thoroughly naturalized. Christopher Greening is considered to be the proto-needle maker of England. No patent relating to needles is recorded before 1755. Thanks to the improvements of successive inventors the manufacture has now attained a high degree of perfection. The dry-grinding of needles is a most unhealthy task, yet the grinders cannot be persuaded to use the simple contrivances which would protect them from the evil results of inhaling the minute particles of steel thrown off in the process of grinding. The British workman prefers to have his lungs riddled with steel filings rather than wear a magnetic wire gauze net, which would add years to his life. And this wholesale suicide passes almost unnoticed in a country which prides itself upon its Christianity. A German inventor is said to have discovered a method of sharpening steel and wires by means of the electric current. This, if correct, will sooner or later put an end to Sheffield self-murder.

The medical patents are a curious class. The first was granted to Thomas Grent for a moveable "hydraulike," which, being placed by a bedside "causeth sweete sleepe to those which either by hott feavers or otherwise cannot take rest." A musical box appears to have been attachable to this instrument. Anæsthetic apparatus was not patented until 1846; in 1857 we have an invention applicable to the embalming of bodies; disinfectants first appear in 1799. The first feeding-bottle seems to be that of P. L. T. Thiers (1847); it was used in connection with a breast pump, and not intended for the conveyance of prepared food. Most of the feeding-bottles now in use are modifications of that patented by Edward O'Connell in 1853. Some medical patents have an air of eccentricity about them; there is one for milking cows, and another for curing croup in fowls.

Richard Warren, in 1781, patented medicated gloves intended to preserve the hands from chapping.

The first artificial leg was patented by Thomas Mann in 1790; in 1800 James Potts protected an "artificial arm and leg upon a new or improved construction" (the wording shows him to have been a cautious man); in 1854 Auguste Boissonneau patented some "improvements in artificial eyes."

Some patents have been granted of an obviously improper character. The protection afforded by letters patent to deserving inventions was surely never intended to apply to quack medicines. It is gratifying to see that of late applications of this kind have been refused.

Tobacco has been the subject of a good number of patents, most of them relating to improvements in the machinery for its preparation. The first in point of date is that of De la Chaumette, who, in 1721, protected "two snuff boxes, one with a slider and the other with a sweep, out of which snuff may be taken without pulling it out of the pockets and without spilling."

The second patent (1747) is for a tobacco-cutting machine; the third (1749) is for a medicinal powder, consisting of tobacco and other herbs pulverized; one tablespoonful of this elegant mixture "struck for a dose up the nose as snuff," would according to the solemnly expressed opinion of its inventor, one of the tribe of Smith, cure various disorders of the "hypocondriac and melancholy kind." A melancholy remedy, whatever the disease might be. This is one of those few industries which a sincere lover of his country would gladly dispense with. It is not pleasant to contemplate the waste of time and money and health caused by the increasing use of this narcotic poison. No invention can possibly be patented to repair the ravages which the fatal habit of smoking is inflicting upon the rising generation.

In few things are the differences between ancient and modern civilization more striking than in the methods of obtaining artificial light. In the heroic ages torches of resinous wood seem to have been the only means for conquering darkness, and the highest perfection the Greek or Roman attained was the oil lamp, with one or more wick-holes. These, from the imperfect supply of oil to the wick and the amount of carbon lost as smoke, must have been very poor affairs. Hero, of Alexandria, about B.C. 150, invented a method for ensuring a steady supply of oil to the wick by means of water. A modern invention is that of Peter Keir, who in 1787 proposed to employ for this purpose another fluid whose specific gravity is greater than that of oil, and which "may by its weight be brought to act upon and press upwards a column of oil." The first real improvement in lamps is that for which Ami Argand obtained letters patent in 1784. The Argand is now so familiar that one can scarcely realize the fact that a hundred years ago it did not exist. Thousands of years the sons of Adam had used vessels of light one degree only removed from the proto-lamp, and yet this invention, beautiful in its simplicity, is a thing of only yesterday. It is curious to find that in the year preceding Argand's patent a M. J. I. Bouchet obtained one for a "lamp or lantern which consumes less oil than those now in use, and has the particular quality of producing neither smoke or smell." Unfortunately no specification of this invention was enrolled, so that it cannot be compared with that of its successors.

Street lamps appear to have been unknown before the Christian era. It was not until 1716 that London had public lights, although long before that date householders had been required to hang out lights on dark nights. When the century was entering into its teens the metropolis was lighted with gas. The lime light was used by Drummond in 1824, yet no patent for it is found earlier than that of Gordon and Deville in 1835. The Bude light dates from 1839, and consists, as is well known, in inserting into the interior of the flame a jet of pure oxygen. Magnesium, discovered in 1830, was not the subject of a patent before 1864.

Most readers will recollect the word ozokerit, which some

time ago stared one in the face from the pages of every newspaper and magazine. It is a hydrocarbon found as a mineral in Moldavia and Wallachia. In its natural state it is a dirty brown colour, but is manufactured into candles beautifully white. Its melting point is 140° F., which is higher than that of stearine, and allows the use of a large wick. It is the brightest of all artificial lights.

Failing space warns us to bring to a close these random notes on industrial history drawn from the "Specifications of Patents." An examination of the table will abundantly show that there is no branch of manufacture which has not contributed its quota of ingenious devices to the patent roll. Nothing is too great for the inventor to attempt, nothing is so small as to escape his notice. His soul is not "above buttons," yet he strives to fly up into the blue sky, and hopes to yoke the bird of Jove to his chariot-wheel, and to those who laugh at his extravagance he can point out that he has already stolen the bolts of the Olympian Thunderer.

WILLIAM E. A. AXON.

THE CENSUS OF 1871.

A census to be of value must include much more information than the mere numbers of the people. The earliest census of which there is any record had regard mainly to the "fighting men," and probably with savages of the present day, if they number their people, the fighting men only are taken account of. In Numbers, 1st chap., from the 17th to the 20th verses, there is a reference to the first census ever taken, in so far as we know. The direct command given to Moses certainly does not justify the religious objections to census taking that are entertained by a limited number of persons, for we are told that the Lord commanded Moses to number the people, which he did "by their generations, after their families, by the house of their fathers, according to the number of the names, by their polls, every male from twenty years old and upwards, all that were able to go forth to war." The numbering of the people of the world since the time of Moses has been loosely and irregularly conducted. There is no evidence of any attempt at numbering the people of any part of the United Kingdom prior to the commencement of the present century. About the middle of the last century an estimate of the population of Great Britain was made, and the figures arrived at, in 1751, gave a population of 7,392,000. In the latter half of the last century emigration commenced, and it was contended that the population was decreasing. The result of this contention was that the first legal census was taken under Mr. Pitt's administration in 1801. This

was the year of the Union with Ireland, a year of famine and of sanguinary war with France, which had the Northern Confederacy for its allies. In this first census, and in that which followed in 1811, no account was taken of the ages of the population. In 1821 ages were first taken, but the question of age was purposely left optional ; even under this enquiry, however, the ages of 8-9ths of the population were obtained. In 1831 the number of males of 20 years and upwards was required ; in 1841 the names and ages of all the persons enumerated were stated with tolerable accuracy ; in 1851, these particulars were again required from heads of families ; in 1861 and 1871 numerous additional items of important information have been collected.

It is evidence of the lusty vigour of our trans-atlantic cousins that they have already completed their ninth census, whereas the eighth of the United Kingdom only has been taken. We learnt from Washington, U.S., a few months since that a preliminary report on the American census of 1870 was in the press, and nearly ready for publication. The term preliminary is likely to convey an erroneous impression, inasmuch as the forthcoming report is an instalment of the whole returns, and complete in itself in so far as it pronounces. It is embraced in a quarto volume of about 300 pages, printed in double columns, without "leads." The three tables comprise :—1. The classes of population by States, according to each of the nine censuses, from 1790 to 1870 inclusive ; 2, Classes of population by counties from the nine censuses ; and 3, The population of all civil divisions smaller than countries, and the proportion of white and coloured, native and foreign-born population for the three censuses of 1850, 1860, and 1870. The later volumes are to embrace statistics of agriculture, manufactures, mortality, and miscellanea. The classes of population are divided into white, free-coloured, slave (so it is reported), Indian and Chinese. This first volume, if not already issued, is expected to appear immediately. It will be followed in rapid succession by the several volumes devoted to the statistics of mortality, population by age and sex, and such particulars as relate to the moral and intellectual condition of the people, as churches, schools, paupers, crime, libraries, &c., while a concluding volume will relate to health and industry. The complete work was promised before December. We hope the details of the census of the United Kingdom may be published with at least equal promptitude.

A preliminary stage of the important work of numbering and describing the people, houses, and buildings, of the United Kingdom was the delivery of schedules to the occupiers of houses, and on Monday, April 3rd, the culminating duty was performed of collecting the filled-up schedules. The previous business consisted of the signing of the agreement, by which appointed enumerators were bound, under a penalty, to discharge their duties faithfully ; to receive their schedules, their enumeration books, and their instruction and memorandum books. Houses and buildings had to be enumerated and partially described. Every

inhabited house was of course so indicated, and the facts stated as to whether the house was occupied by one family or more than one, or by lodgers in addition to the responsible occupier.

The particulars concerning houses were filled in by the enumerator when the schedules were delivered, including the road, street, number or name of the house or building; whether a private house, shop, public-house, church, chapel, school, cottage, or other building as thus :—

		Schedules left.	Schedules collected.	Notes.
No. 12, King Street. . .	Tailor's shop . . .	1	1	
No. 13, King Street . .	Public - house (Marquis of Lorne)	2	2	
No. 14, King Street . .	Private House . .	1	1	To let (a person in charge).
Queen's Place. .	Baptist Chapel . .	—	—	
No. 1, Princess Street. . .	St. George's Schools	1	1	Schoolmaster's House —part of building.
No. 2, Princess Street. . .	Uninhabited . . .	—	—	Recently built.
No. 3, Princess Street . .	Private House . .	2	2	
	Three houses building.	—	—	
The Rectory . .	Private House . .	1	1	
Prince's Place .	Mechanics' Institute	1	1	Housekeeper and family live on the premises.

The enumerator's book stated how many schedules he left at every inhabited house visited, and how many he collected. Houses "to let," and houses building were entered, and so described. Churches, chapels, public-houses, and public buildings of all kinds, were noted, as stated, as also premises occupied as offices, or for other business purposes uninhabited at night. In addition to these particulars, the enumerator filled up the headings of every page of his memorandum book with the town, village, or hamlet, local board, or Improvement Commissioners' district, and the ecclesiastical district to which the returns related. He also entered notes in his memorandum book as to the inhabitants of the district temporarily absent, and the inhabitants temporarily present,—a rather onerous and difficult duty, not probably very accurately performed. He had also to take cognizance of persons who, on the night of the 2nd—3rd of April slept or remained in barns, sheds, caravans, tents, on doorsteps, under arches, in the fields or woods, or in the open air. To assist in tabulating this curious information,—some other assistance was doubtless needed for collecting it,—a schedule was provided in the enumerator's memorandum book, in which the stray waifs of humanity—the houseless and homeless—had to be summarized.

The allowances for census work were published in a Parliamentary paper. The superintendent registrars were allowed 6*d*., and 2*s*. for every 1,000 persons, properly enumerated, over

and above the first 10,000 in each district; the registrars had a fee of 4*l.*, and 1*s.* per 100 for every 100 over 1,200; the enumerators had a fee of 1*l.* 1*s.* and 2*s.* 6*d.* per 100 for all above 400 enumerated.

In populous districts, the metropolis for instance, the extras especially with superintendents and registrars exceeded the fees and the enumerator's extras also made it better worth expending his labour and time upon the important work. It was stated that an increased scale of allowances had been made on this occasion of census-taking, but if the work was done faithfully and intelligently, the fees were fairly and well earned. Take, for instance, the case of the enumerators, the rank and file of the census army. They had to attend first at the registrar's office, forming, in certain instances, a not very "sweet crowd" of from 50 to 100 persons, who were on the whole not among the most prepossessing specimens of the human race in character and appearance. There they were in a small room and a narrow lobby, to wait their turn for an hour it may be, till they were called in and accepted. They were next required to attend and "sign the agreement," when a similar detention occurred. The next attendance was to get their instructions, enumeration book, and householders' schedules—scene repeated. Next to deliver schedules, and keep a record of every schedule delivered; if occupier absent or unable to answer, and no one in the house capable of supplying the information needed, the enumerator must "call again." Having completed his delivery, the enumerator, on April 3rd, collected his schedules; he found some lost, others blank, others manifestly wrongly filled up; he had to supply duplicate forms, fill up the blanks, correct as well as he could evident errors, and having completed his collection, had to copy every item in the whole of the schedules into his enumerator's book, adding more or less copious notes of his own. Having done all this, he had next to send in before the 10th of April, all his books and papers, and his claim for payment, which for a district numbering say 600 inhabitants, amounted to 1*l.* 6*s.* sterling, a rate certainly not in excess of that at which some other kinds of public work is paid, and considering the nature of the duty, very much below the average.

The instructions to registrars of births and deaths as to their duties in taking the census, provided that the command-in-chief should devolve upon the Registrar-General, assisted by a staff augmented for the special work. His divisional officers, so to speak, were the superintendent registrars in charge of registration districts; their subalterns, in turn, were the registrars of births and deaths in charge of sub-districts; the enumerators constituted the "rank and file" of the force.

The authority and duty of supervision of the several classes of officers was indicated by their designations. The Registrar-General's powers reached downwards to the enumerator through the other two classes, and the enumerator's nomination and work passed upwards through the same channel.

The country was divided into enumeration districts for the census of 1861, and it was thought desirable to retain as far as possible, especially in the country and in the more crowded parts of towns, the division then adopted. For such localties the plan needed but slight modification, but numerous and important alterations were necessary in relation to the metropolis, and to many large cities and towns. In the suburbs of London, north, west, south, and south-east, residential districts have come into existence with paved roads, streets in scores and inhabited houses in hundreds, that were fields and gardens, or waste lands waiting for the builder, in 1861. It is not too much to say that the revised plan of division for the metropolis required the addition of hundreds of new enumeration districts. The metropolis needed, allowing an average of 1,000 persons to each enumerator, an army of above 3,880 men, whose fees, according to the table of allowances sanctioned by the treasury would amount to nearly 7,000*l.*, which is, of course, exclusive of the extra allowances to registrars and their superintendents for their special work.

An important circular was issued by the Registrar-General urging mayors and other local authorities to carry out the provisions of the Local Government Act, which enjoins that all streets should be named and all houses numbered under their respective jurisdictions. The circular had some interesting notes appended, particularly respecting London streets. It appears that the metropolis has 30,000 streets, of an average length of a furlong, or an eighth of a mile. The longest run to about a mile, and a few to even more. The house numbers reach to 929, but that is the highest figure. The name of a new street in London is now restricted to one word, with the addition of "street" or "road" or other analogous term. The word road is only applied to leading thoroughfares of considerable length. Lists of streets and of all changes in street names are published in London, the list showing also the parish in which each is situate, an example worthy of imitation by the authorities of all large towns. Experience has decided in favour of numbering the houses of a street, so that all the numbers upon one side of the street shall be odd, and on the other side even. The rule is to make the left hand house at the end of the street nearest one central point (in London it is St. Paul's Cathedral), No. 1. Thus, with the back towards the central point the odd numbers are on the left hand side. In some English villages all the houses are numbered consecutively; and that system is also in use in Vienna, where every house has its own distinctive number. For the purposes of the census a system of designating every house distinctly would have been of great utility. It would be also of permanent value for the registration of births and deaths, for the direction of letters, for registering electors, and, in short, for all administrative arrangements. It is much to be desired that local authorities may act upon this practical suggestion.

Population grows naturally, according to Malthus, at rates in

geometrical progression, and according to this law the problem might seem simple: given the population of a certain defined locality in one year, the population of the same locality at the end of a decade will be so many. There are, however, numerous disturbing influences to drain off the naturally increased population in one locality, and to add to the natural increase in another. Among these disturbing influences, facilities for locomotion, and especially railway communication, take the foremost place. There are other causes of remarkable changes in the population of particular localities, but the facilities for moving from place to place offered by railways, and the advantages enjoyed for the transport of raw material and manufactured products are the chief agencies which tended to produce the results, in so far as they have been set forth, of the census of 1871.

There is one class of disturbing influence affecting the population, with which railway communication has little or nothing to do, namely, commercial treaties and altered tariffs. To the French commercial treaty the falling off in the population of certain localities is doubtless attributable. Congleton, Cheshire, for instance, engaged in the silk manufacture, has a population of 1,000 fewer now than in 1861; Macclesfield, also, with a population of 59,345, has 2,198 fewer than in 1861. Coventry, with 40,109 in 1871, shows a falling off of 1,538 since 1861. There are other districts, in which there are no expansive industries capable of absorbing the increase of population, and the additions from time to time are of persons who have to leave the place of their birth under the pressure of inevitable law. In such places the population fluctuates slightly from one census taking to another. Of this class is Rutland, the smallest county in England, with a population in Oakham district of 11,140, or 28 more than in 1861; and Uppingham district, the only other in the county, with a population of 12,242, or 245 fewer than in 1861. Railway communication, it cannot be questioned, greatly facilitates the efforts of the redundant population of such localities to find other spheres in which to apply their powers, and opens to them the labour market of the world.

There are other instances of an opposite character of greatly increased populations, in which railways play an important part. In some of these their influence may not be apparent at first sight, but it is nevertheless vital and essential. The most marvellous instances of increased population in the United Kingdom—apart from London—are probably the cases of Barrow-in-Furness and Middlesborough, North Yorkshire. The rapid growth of these towns is primarily, it may seem, attributable to the development of their rich mineral resources, and to the advantages they enjoy, in conjunction with such resources, in being seaports. Making every allowance for these facts, however, without local railways, and railways in other parts, they never could have reached the prosperity to which they have attained. If they could do no more than convey their produce from one seaport to another, and were without the means of

internal communication, their produce would be comparatively valueless. The growth of the two towns named is sufficiently indicated by the increase in their population. In 1831 the population of Middlesborough was only 154, in 1861 it had reached to 18,992, in 1871 it is 46,643. The growth of Barrow-in-Furness has been little less marvellous. Thirty years ago it was only a small hamlet; in 1861 it had a population of 3,300, in 1871 it has a population of 18,331.

Barrow and Middlesborough are now incorporated municipal boroughs. The iron and steel and other works at Barrow employ above 2,000 men; it has its docks, which are being progressively extended; flax and jute mills, rolling mills, iron shipbuilding, and engine works, waggon works, wire works, and other large and important undertakings are in active progress, and it has by the overland and other lines, railway communication with all parts of the United Kingdom.

The most remarkable evidence of the influence of railways on population is to be found in London and the other large cities and towns in the United Kingdom. Facilities for personal intercourse and for the transport of materials and products, have attracted large populations to London and other great commercial and manufacturing centres, whence they are again dispersed throughout the suburban districts. London, as the real and living, although not the geographical, centre of the Empire, first demands consideration. It presents the curious peculiarity that, whereas in the aggregate its population is enormously increased, the population of its core, that is of the City proper, has greatly diminished. The population of London within the Metropolitan and City Police division in 1851 was 2,680,735; in 1861 it was 3,222,720; and in 1871 it is 3,883,092. In 1861 the sleeping population in the City was 112,063, in 1871 it was reduced to 74,732, with a day population of probably not less than 200,000. The inhabited houses in the City now are 9,248, in 1861 they were 13,218. The decrease has been general in both houses and inhabitants throughout the City. It may be interesting to state that at the last census, the population of Marylebone was 477,555, Finsbury 443,316, Tower Hamlets 391,568, Lambeth 379,112, Hackney 362,427, Chelsea 258,011, Westminster 246,413, Southwark 207,335, Greenwich 167,682, London City 74,732. The census shows that the borough and city with the next largest populations are Liverpool 498,346, and Glasgow with 477,144.

It is not in the city of London alone that the sleeping population is diminished. In the Strand registration districts there are now in round numbers 7,000 fewer night inhabitants than in 1861; in St. Margaret's, St. George's, Hanover Square, 3,000 fewer; in Marylebone, 3,000; in Camden Town, 5,200; in Holywell and St. Leonard, Shoreditch, 7,000; in Christ Church and St. Saviour's, Southwark, 6,000; in St. Olave, Southwark, 3,500; with considerable reductions in numerous other districts.* The localities in which

* In a number of these instances the decrease in the population is attributable to

these outlying inhabitants, and the majority of the new comers, have their domiciles may be inferred from a round of visits to the railway termini on a succession of mornings from eight to ten o'clock, or of afternoons from to four to six. The omnibuses and tramway cars inwards may also be noticed as conveying their heavy contingents every morning to make up the day population of London. In the immediate neighbourhood of London, the largest increase in population has been in Kensington, Islington, and Kentish Town. In Kensington, with Brompton, Hammersmith, and Fulham, there is a population of 283,000, which is an increase of 98,000 upon the population of 1861. The population of Islington, 213,749, is an increase of 58,408 upon the census of 1861. Kentish Town, with a population of 68,198, shows an increase of 23,881. Hampstead, with a population of 32,271, shows an increase of 13,165. Bethnal Green shows an increase of about 15,000.

The residential traffic accommodated by the railways is indicated by the greatly increased population of some of the suburban districts in other directions, and of the towns surrounding London, and even as far distant from it as Tunbridge, Hastings, Brighton, and other outlying towns. The population of Bow in the East is 67,777, or an increase of 32,110 upon the population in 1861. Brixton has 35,431, or 15,364 inhabitants more than it had in 1861. Battersea has increased by 34,388, the population by the last census being 53,988. Peckham has 42,159 inhabitants, 14,024 more than in 1861 ; and the parish of St. George, Camberwell, shows an increase of 13,518. Notwithstanding the closed dockyards, the population of St. Paul's, Deptford, amounting to 53,696, is an increase of 15,862 upon the population of 1861. Those who know the district, however, are aware that that increase is not in the town of Deptford proper but in the residential districts, known as New Cross, Brockley, Lewisham High Road, and the parts adjacent. Eltham shows an increase of 1,519 in its population. Lee, including parts of Blackheath, with a population of 16,430, shows an increase of 5,427. Lewisham, with 11,508, of 4,136 more than in 1861. Sydenham is increased by 8,421 in the ten years. In Epsom and the two adjoining districts there is an increase of 8,000, in a population of 30,000. Reigate has increased by 6,354 in 20,058 ; and Croydon has risen from 37,093 in 1861 to 71,315 at last census. All round on the south-west, south, and south-east of London similar illustrations abound ; the populations have largely increased during the ten years at Wimbledon, Kingston, Richmond, Bromley, Bickley, Bexley, Chislehurst, Dartford, Tunbridge and Tunbridge Wells, which have together a population of 38,458, being an increase of 9,673 upon the population of 1861. Hastings and St. Leonards have an increase of more than 12,000, the total population being 20,013.

The teeming day population of London, holders for the greater

the displacement of the inhabitants for railway and other public works, including new streets and thoroughfares.

part, of railway season tickets, may be traced to numerous other localities, to the north-east, north, north-west, and west of London, to places where the increase in the population is mueh greater than the geometrical ratio of Malthus or any of the statists would bring out. In the east and north-east, West Ham, Stratford, Leyton, and Walthamstow, have a total population of 99,143, being an increase of no less than 39,824 since 1861. Further round to the west, various other metropolitan suburbs that may be said to have been created by the railways, show an extraordinary increase in population: Hornsey, Tottenham, Edmonton, and Enfield united have an increase of 24,486 persons; the new suburb of Willesden, to the north-west, has risen from a population of 3,879 in 1861, to 15,861 in 1861, a difference of 11,982. Finchley has an increase of 3,212, Barnet of 2,285, Hendon, 2,457, Harrow, 3,493. And even Watford has received a considerable addition to its resident population from the day population of London, the increase being 4,656 upon a population of 7,418 in 1861. In a westerly direction, regal Windsor has added 3,595 souls to its population of 13,621 in 1861, but the increase does not, to an appreciable extent, consist of royal personages or their dependents. Isleworth and Hounslow have an increase of 4,394, Twickenham of 2,458, Chiswick of 2,003, Brentford, the county town of Middlesex (*!*) of 6,303, and Acton of 6,240. Many other illustrations might be given from the census returns, not only of the magnitude and growth of London within a fifteen miles' radius around Charing Cross, but also of the creation and growth of distant towns, united to London by the railways and bound to it by the daily intercourse of their populations.

Numerous other cities and towns furnish illustrations of the beneficial action of the railways in relieving crowded central localities of their resident population, and facilitating their daily removal to more salubrious localities without the city. Liverpool has a population of 493,346, or an increase of 49,408 as compared with that of 1861. Concurrently with this large increase, there is a decrease of 31,389 in the population of seven central registration districts, but an increase of no less than 117,005 in seven other surburban districts, which had a population of 225,847 in 1861. In like manner, Manchester, with 383,843, has a population of 21,483 less in four central districts than it had in 1861, but has a more than corresponding increase in surburban localities, accessible by railways, such as Stretford, Cheadle, Wilmslow, Bowden, and the like. The last-named favourite residential locality, with Altrincham, has an increase of above 7,000 upon a population of 18,214 in 1861. The population of Manchester with Salford, the "borough" or Southwark of Manchester, has now reached an aggregate of 508,648 being an increase of 48,220 upon the population of 1861.

Amongst the census curiosities it was found that St. Kilda, in the Hebrides, was left out. It was afterwards ascertained that the inhabitants on the island only numbered 71, 43 females and 28 males. There was only one child, and that was in a

dying condition. For a number of years, so it is stated, children born on the island or brought to it have not survived.

As regards longevity Cumberland is conspicuous. The registrar of Whitehaven entered in a recent quarter the deaths of 15 persons whose ages aggregated 1203 years, or an average of 80 years each, the 5 eldest averaged 90 years each.

From the returns it would appear that the children of Westmorland are better cared for in the matter of education than those of any other English county.

In almost all cases of cities and boroughs there is an increase more or less in the population; but there are exceptions in which there is a decrease, as in the cases of Marlborough in Wiltshire; Devonport, Devon; Truro and Falmouth, Cornwall; Wells, Somerset; Tewkesbury in Gloucestershire; Ludlow and Bridgenorth, Shropshire; Coventry, Warwickshire; Stamford, Lincolnshire; Stockport, Macclesfield, Congleton, and Staleybridge, Cheshire; Ashton-under-Lyne, Lancashire; Knaresborough and Richmond, Yorkshire. On the other hand there has been a marvellous increase in the population of various other towns and localities, to which we have referred elsewhere.

It is somewhat strange that the regulations touching the census of England, Scotland, and Ireland should vary so much. We have already described what the requirements were for England and Wales. For Scotland the inquiry applied amongst other particulars to the number of the population, the children receiving education, the houses, and the rooms with windows. The Irish census embraced the number of inhabitants for each ten years since 1841; the religious profession in 1861 and 1871; the number of houses, and the number of families for the last four census takings.

We now proceed to give a *résumé* of the results of the census.

SUMMARY.

	Area in Acres.	Population 1871.	Proportion per cent. in the several parts of the Kingdom.
England	32,590,397	21,487,688	67·5
Wales	4,734,486	1,216,420	3·8
Scotland	19,639,377	3,358,613	10·6
Ireland	20,322,641	5,402,759	17·0
Isle of Man	180,000	53,867	·2
Channel Islands	466,884	90,563	·3
Army, Navy, and Merchant Seamen abroad (estimate)	. . .	207,198	·6
United Kingdom Totals	77,513,585	31,817,108	100·0

In England and Wales it was found that there are 37,324,883

acres; that there are 4,259,032 inhabited houses, and 22,704,108 inhabitants. The rate of increase in the population from 1851 to 1861 was 12 per cent., from 1861 to 1871 it has been 13 per cent. The population of England and Wales in 1801 was 8,892,536, and the increase since is nearly equal to the whole population existing in that year, when the country was engaged in the great conflict with France and other powers.

In the north, Stockton and Newcastle have greatly increased in population; Cockermouth, in Cumberland, singularly contains precisely the same population (7,057) in 1871 as in 1861; Whitehaven shews a slight decrease. In Wales many towns such as Newport, Cardiff, Merthyr Tydfil, Swansea, and others show a large increase in population; but at Pembroke, Haverfordwest, and Beaumaris there is a considerable decrease. It would appear that the population of the United Kingdom is never stationary, but increases at about the rate of 700 per day. The census returns show that during the reign of her Majesty Queen Victoria, her subjects have increased by nearly 6,000,000 persons.

We learn from the census of the United States that the population in the aggregate is somewhere about 40,000,000, of whom about 33,000,000 are natives, and the remainder foreigners. There are many particulars of much interest in the Registrar-General's preliminary report, which limitation of space forbids us to enter upon.

The Scotch census is very interesting. It gives the particulars common to the English enquiry, and also professes to supply an account of the houses and rooms with windows. This portion of the return we consider so vague as to be worthless. The enquiry regarding education is interesting.

The ages of the children receiving education differ from those referred to in the census of 1861. Then it was directed that the number of all children of the age of from five to fifteen years who attended school should be given; but the result was unsatisfactory, and did not accomplish the end in view. In 1867, the Scottish Education Commissioners reported that "any attempt at school legislation must fail, unless legislators take into account the period of life which can be spared for educational purposes.

"From these facts, it appears that in Scotland, education does not begin much earlier than six years.

"It has already been observed that comparatively few children remain at school after twelve years of age; and the question arises, whether school attendance can be prolonged beyond that period.

"It may be assumed, therefore, that a large majority of the scholars attend school for some time between the ages of six and twelve."

It should here be stated that Edinburgh, Glasgow, Dundee, and others of the large towns in Scotland, are much better sup-

plied with infant schools than cities and towns south of the Tweed.

The population of Scotland, including the seamen belonging to the shipping in Scottish ports or waters, amounted on April 3rd, 1871, to 3,358,613 persons, of whom 1,601,633 were males, and 1,756,980 females. This, as compared with the census of 1861, shows an increase of 296,319 persons in ten years, or 9·67 per cent.

It thus appears that the population of Scotland has been increasing during the past ten years very nearly in the same ratio that it did from 1831 to 1841, and from 1841 to 1851. It may be remembered that, probably from the greater amount of emigration, and greater slackness in trade, the increase between 1851 and 1861 was only at the low rate of 6 per cent., so that the diminished emigration and the increased prosperity of the country between 1861 and 1871 seem sufficiently to explain the greater rate of increase during these years. The tables relating to emigration show that between 1861 and 1871 only 257,838 natives of Scotland emigrated from the ports of the United Kingdom at which there are emigration officers, while from 1851 to 1861, with a smaller population, the number was 183,620.

In Scotland there has been a continuous progressive increase, at a regular rate, from 1801, when the population was 1,608,420, until 1871, when it was 3,358,613. This increase, however, is unequally divided. The population in 1871 is, in each instance, less than in 1861, in the cases of Shetland 31,605, present population, Orkney 31,272, Caithness 39,989, Sutherland 23,686, Ross and Cromarty 80,909, Inverness 87,480, Perth 127,741, Kinross 7,208, Roxburgh 53,965, Dumfries 74,794, Kirkcudbright and Wigton 38,795, Argyll, reduced in population from 1831, when it contained 100,973 inhabitants, to 75,635 in 1871. In numerous Scottish counties there are only slight variations in the number of inhabitants during the last 10 years. The increase of 300,000 in the population is made up from the following counties:—Banff about 3,000 increase; Aberdeen about 23,000; Fife, 6,000; Stirling, 7,000; Dumbarton, 6,000; Renfrew about 39,000; Ayr, 2,000; Lanark, 134,000; Edinburgh, 55,000; with smaller additions from other counties. The population of the principal towns in Scotland in 1861 was 884,955, in 1871 it was 1,068,483; the population of other large towns was at the former period 254,030, in 1871 it was 310, 144; the population of the small towns in 1861 was 502,833, in 1871 it was 540,689; the population of the rural districts in 1861 was 1,420,476, in 1871 it was 1,439,297. The percentage of increase has been in the principal towns 20·96 per cent., in the large towns 22·09, in the small towns 7·53, in the rural districts 1·32. The aggregate increase in the population of Scotland has been at the rate of 9·67 per cent. in the last ten years.

The Irish enumeration was effected by the officers and men of the Royal Irish constabulary, whose local knowledge rendered them peculiarly well suited for the undertaking. The country

was divided into 248 districts, and 4,536 men of the Royal Irish constabulary, with 178 of the Dublin metropolitan police were employed as enumerators, under inspectors.

It is melancholy to notice the decrease in the population of Ireland, notwithstanding its superior natural resources compared with those of Scotland. We subjoin a painfully interesting statement.

The total population recently enumerated amounts to 5,402,759 —the sexes being 2,634,123 males and 2,768,636 females, or 396,208 of both sexes less than returned for April, 1861—being a decrease of 6·83 per cent. during the last ten years—7·16 per cent. as regards males, and 6·52 respecting females.

The following is the provincial summary of the last decennial enumerations :—

Provinces.	Number of Persons in				Decrease between 1861 and 1871.	
	1841.	1851.	1861.	1871.	Persons.	Rate per Cent.
Leinster	1,982,169	1,682,320	1,457,635	1,335,966	121,669	8·35
Munster	2,404,460	1,865,600	1,513,558	1,390,402	123,156	8·14
Ulster	2,389,263	2,013,879	1,914,236	1,830,398	83,838	4·38
Connaught	1,420,705	1,012,479	913,135	845,993	67,142	7·35
Seamen and others at sea on census night	—	—	403	—	—	—
Total of Ireland .	8,196,597	6,574,278	5,798,967	5,402,759	396,208	6·83

The present percentage of decrease is largest in the town of Galway, 22·30 ; the King's County, 15·84 ; Queen's County, 14·39 ; Tipperary, N.R., 14·96 ; and Meath, 14·39. The only localties in which an increase of population has taken place are the town of Belfast, 43·41 per cent. ; Londonderry city, 20·92 per cent. ; Dublin county, including metropolitan suburbs, 2·87 per cent. ; the city of Waterford, ·19 per cent. ; and the county of the town of Carrickfergus, ·22 per cent.

In the following counties the decrease in the number of inhabited houses amounts to more than 9 per cent., viz. :—Queen's County, 10·54 ; Meath, 9·95 ; Monaghan, 9·70 ; Tipperary, N.R., 9·65 ; King's County, 9·31 ; and Fermanagh, 9·13 per cent.

The number of inhabited houses increased in the following localities :—Town of Belfast, 50·40 per cent. ; Londonderry city, 26·11 ; county of the town of Carrickfergus, 11·53 ; Waterford city, 8·70 ; Cork city, 7·87 ; Dublin county, including metropolitan suburbs, 6·98 ; Dublin city, 5·52 ; town of Drogheda, 2·47 ; and Kerry county, ·17 per cent.

The average number of persons to a family in the year 1861 was 5·14 ; and in 1871 it is 5·04.

The emigration from the United Kingdom from 1861 to 1871 was 1,978,800 persons, of whom 614,638 were English, 149,213 Scotch, 819,665 Irish, 287,153 Foreigners, 108,131 not specified.

Reverting to Ireland, the number of houses inhabited in 1841 was 1,328,839; this number gradually fell to 960,352 in 1871; there was a similar decrease in the number of houses uninhabited and building. The decrease in the number of inhabited houses from 1861 to 1871 was 34,804, or 3·50 per cent.; the decrease in the number of uninhabited houses 12,635, or 30·85 per cent; the decrease in houses building 642 or 21·99 per cent. There has been a slight increase of houses building in Ulster.

The inquiry into the religious denominations of the inhabitants of Ireland gives the following results for 1871 :—Attached to the Roman Catholic Church, 4,141,933 ; "Church of Ireland," or "Irish Church," 467,865, and Protestant Episcopalians, 215,430 ; these two amounting together to 683,295, represent what was denominated the "Established Church." Presbyterians number 503,461 ; Methodists, 41,815 ; Independents, 4,485 ; Baptists, 4,643 ; Society of Friends, 3,834 ; Jews, 258. In addition to these there is a residue of 19,035, classed as of "other Christian persuasions," including members of the Moravian Church, travellers, temporary lodgers, and mendicants (presumed to be Christians), as to whom the enumerators, or the persons who filled the householders' schedules, were unable to obtain the necessary information.

The preliminary reports from the census schedules present as yet only unrevised figures, but it may be supposed that the results approximate very nearly to absolute accuracy.

An important use has been made of the census returns by the supply of information desired by School Boards established under the Elementary Education Act of 1870. The London School Board alone was supplied from the Census Office with certain particulars concerning 700,000 children between the ages of three and thirteen, living within the limits of the London School Board district. The communication of the information could not be regarded as strictly in good faith, an official document having declared that the facts and figures collected under the authority of the Census Acts would be strictly private, and used for no other purpose whatsoever than for the numbering of the people. It may here be remarked that one of the queries in the census schedule excited considerable suspicion, and in numerous instances was evaded. It related to the number of men and boys employed in his business, by the "head of family" making the return. It was not unnatural that the tradesmen or others so interrogated should suspect an underground communication between the Census Office and that of the Chancellor of the Exchequer, and that in the event of their returning 20 or 30 men as being in their employment, the astute head of the Exchequer Department, or his subordinates, might conclude that such

householder was paying less than he ought in income tax. In any case, it would have been better, probably, that the information collected for the education census should not have been supplied to the School Board by the census authorities, and that the former body should have adopted its own course in taking the educational census.

With reference to the latter subject, a great mass of curious information was obtained; and it is due to the School Board to say that, if the educational enumerators did their duty, the Board obtained the statistics at a very low price. The remuneration given to the educational census enumerators was five shillings per 100 families. In the days when mendicancy was legalised in Scotland a clever Gaberlunzie was accustomed to say that "Kelsy weel beggit's worth 15 shillings a day." No educational census enumerator could, with a long and toilsome day's work, make a third of the beggar's amount. The particulars the enumerator had to collect were:—Names of heads of families, children's names of the school age, the ages of such children, if educated at a school where the fee exceeds 9*d.* per week, if educated at a school where the fee is 9*d.* per week or less; to state the name and locality of such school; if not attending school to state the reason; to state also whether young persons of the school age at work were earning full wages or were "half-timers." Having collected all this information, sometimes after repeated calls, he was required to tabulate it, his abstract sheet containing no fewer than twenty-one columns, embracing the number of page in his enumeration book, number of families visited, the total number of children belonging to the class who pay above 9*d.*, and a subdivision of the children attending school and not attending school respectively, of the class paying 9*d.* per week or less for schooling, giving the boys and girls separately under each of these two classes in four groups—3 and under 5 (boys and girls separately), 5 and under 7, 7 and under 10, 10 and under 13. The last two columns embraced the young people of the school age, receiving full wages, or who were half-timers.

A penalty was attached to refusal of information to the population census enumerators, but not to the educational census inquiry. In some instances the information for the population census returns was withheld, but was ultimately obtained without infliction of the penalty. We know of two instances in which the schedules were accurately filled up in every particular except the statement of the ages of the lady-heads of the family, but even these were obtained by discreet enquiries. A number of schedules were sent privately to the Registrar-General to avoid local scrutiny and possible gossip. A gentleman of landed property refused, on religious grounds, to give the information required. His scruples were respected, and the information regarding his family was obtained with tolerable accuracy. One enumerator was assaulted, and he summoned the householder before the magistrate, who inflicted a fine. Several householders

in country districts were summoned at the instance of the enumerators, and fined for resisting the requirements of the Census Act, but the Registrar-General did not find it necessary to institute any prosecution, and it may be believed that the census has never before been more accurately taken.

Relative ages will vary, doubtless, in different localities, but the following facts from a metropolitan surburban district may be interesting. In the schedules of one enumerator, of which there were 261 delivered, embracing 222 inhabited houses, 17 uninhabited and 8 building, the males enumerated were 475 and the females 669, total, 1,144. Of these there were 31 infants under twelve months. The average to each house was about 5 persons. The district contained 59 widows, but only 3 widowers. The average ages of families vary very much. In one instance the family consisted of a widow and four grown up daughters, the average age being 30 years ; in another case the average age of the two heads of the family and their four children was 31 years ; in two other instances of families of seven children each, the average ages were 13 and 16. In three other cases taken in the same locality, the average ages of the families enumerated were 12·5, 13·5, and 14·5. In a population of 664, taken indifferently, the following, exclusive of the 31 infants above referred to, were the relative ages :—There were under 5 years, 62 males, 45 females ; from 5 to 10 years, 27 males, 32 females ; from 10 to 20 years, 31 males, 81 females ; from 20 to to 30 years, 59 males, 96 females ; from 30 to 40 years, 44 males, 51 females ; from 40 to 50 years, 21 males, 23 females ; from 50 to 60 years, 14 males, 23 females ; from 60 to 70 years, 2 males and 13 females ; from 70 to 80 years, 1 male, 6 females, with two females over 80 years of age. In the same district, in 47 instances, the wife is older than the husband, in 102 instances the husband is older than the wife, and in 27 instances the husband and wife are of the same age.

The professions and occupation of the persons living in the district referred to are curiously varied. They include one "gentleman," one "lady," and one "gentleman's wife ;" a Baptist minister, and a *Chef d'orchestre* ; an actress and 6 artists ; a superannuated dockyard foreman, and a "superannuated dockyard foreman's wife ;" a consulting ship-builder, and several policemen ; 20 governesses, and one Bible woman ; 22 annuitants and 3 journalists and newspaper contributors ; one "cambist" and one sugar planter ; 3 telegraphists, one public-house barman, one colonial broker, one hotel manager, and one sea-going engineer's wife ; a hoop-bender and a captain in the merchant service ; an organ builder and a horse-master ; 96 warehousemen, commercial and banking clerks, and accountants ; 19 government clerks, 15 commercial travellers, and a great variety of other business assistants.

In conclusion, we must wait for the revision and arrangement in the Census Office of the vast amount of valuable information that has been collected by the army of 32,000 enumerators,

under the direction of their superior officers. From the revised census reports we shall learn to quote the words of the Registrar-General and his associates, "How the population of the kingdom is upheld; how this marvellous society is organised; how the people are distributed; what houses they dwell in; what numbers of either sex, of children, of men, and women, are living, married, single, widowed at the several ages; what are their relations to heads of families; what occupations men and women of the several ages follow; what numbers living in the several places were born in the same or in other parishes, counties, and countries; and what numbers of the two sexes were labouring under infirmities of the chief senses or of the mind in every locality. This analysis will require time, as it deals with millions of facts and persons; when completed, all the data will contribute to the self-knowledge of the nation. Mere numbers are elements of force, and a prolific, must in the end, beat a sterilized people; but this element of quantity is second in importance to the qualities of the race, for an intelligent, vigorous, and healthy nation, well organised, is alone worthy of continuous existence."

NOTES.—DENSITY OF POPULATION AND RATES OF INCREASE.—The Metropolitan Police District of London embraces 687 square miles, or a square of $25\frac{1}{4}$ miles on the side. It has 5,652 persons to the square mile. The population is increasing at the rate of 4·19 per cent. per annum. Kent, Surrey (except parts in London), Sussex, Southampton, and Berks, have 341 persons to the square mile. The annual rate of increase to the population is 1·60 per cent. Middlesex (except part of London) Hertford, Bucks, Oxon, Northampton, Hunts, Beds, and Cambridge, 288 persons to the mile; increase 1·08 per cent. Essex, Suffolk, and Norfolk, 243 to the mile; increase 0·64 per cent. Wilts, Dorset, Devon, Cornwall, and Somerset, 241 to the mile; increase 0·24 per cent. Gloucester, Hereford, Salop, Stafford, Worcester, and Warwick, 432 to the mile; increase 1·06 per cent. Leicester, Rutland, Lincoln, Notts, and Derby, 254 to the mile; increase 0·88 per cent. Cheshire and Lancashire, 1,082 to the mile; increase 1·43 per cent. Yorkshire, 419 persons to the mile; increase 1·74 per cent. Durham, Northumberland, Cumberland, and Westmorland, 259 persons to the mile, increase 2 per cent. Wales, 178 persons to the mile; increase 0·93 per cent. The increase in each case is the annual rate. The aggregate increase for England and Wales was 12 per cent. from 1851 to 1861; it has been 13 per cent. from 1861 to 1871.

ROBERT SMILES.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, METROPOLITAN CHARITIES, LEGISLATION, STATISTICS, AND CHRONICLE OF 1870-1.

ARCHITECTURE AND PUBLIC IMPROVEMENTS.

I. General Progress.—Art and Public Monuments.

Architects and builders complain that there is less building in progress than in past years; but the number of new buildings we see on every hand, and the accounts we have from all the large towns of the works constructed or contemplated, instead of indicating any material falling off, rather suggest that there is at least enough activity to call forth the best energies of the artist. Indeed, we are far from certain that some abatement of the speed with which we have of late been piling brick and stone may not be beneficial—to the art if not to the artisan. There has been a great deal to do, and it has had to be done hurriedly. Sufficient time has in few instances been allowed for the patient consideration of the idea that seems to be necessary for the successful accomplishment of any artistic work. The execution of a design may be swift, but the gestation will have been slow where the work is worthy. In the racing speed with which we have been designing and building, how seldom does the design appear to have been deliberately thought out with reference first to the purpose of the building, and then to the fitness and beauty of its appearance? In the case of our leading architects, if we consider the number of commissions they have on hand—new buildings, extensions and alterations of old ones, church restorations and so forth—hurried work is unavoidable. Where a man has a multitude of things to do within a limited time, he can give little continuous and concentrated thought to any one; and where these things are buildings which involve a large amount of internal arrangement as well as the necessity of an attractive and ornamental exterior, much of the work must be delegated to assistants, and, with the current opinion that the highest achievement of an architect is the successful imitation of some recognised style or model, the ready course is to take, in whole or part, an admired type and adapt it to the purpose; or to put together a number of parts more or less freely borrowed from "the best examples" of the style selected. It is a method which saves time and thought, and the design so produced is sure to meet the approbation of "competent judges." If it be "good thirteenth century Gothic," whether foreign or native, it will be sure to find defenders, whatever may be the size, place, or purpose of the building. And those who condemn it because it is

Gothic, would be equally earnest in praise of an Italian or French Renaissance edifice designed on a similar principle.

Broadly, our current civil architecture may be divided pretty equally into mediæval and renaissance; our ecclesiastical architecture, it is needless to say, is wholly mediæval. But neither among mediæval or renaissance architects is there any apparent approximation to uniformity of practice. Our Gothic, as we have pointed out in preceding volumes has been steadily becoming more and more foreign in character, till now it is quite a rare thing to see even a village church built without some unmistakable foreign feature. But even in this quasi-continental Gothic, the only agreement seems to be to recede farther and farther from the present time; for a model, French, Italian, and even German is being taken almost indifferently. Structurally, the chief thing our Gothic architects seem to desire is irregularity of outline, an unequal distribution of the leading masses, a scattered play of light and shade. In renaissance we have every variety from the most "classic" Italian, to the most piquant French or Flemish. The only thing we do not see is originality, and probably a really original building would be condemned on all sides. Yet we must have original work before we can lay claim to an architecture that shall be more than ephemeral.

As we have often said, all true architecture has been the growth of its own age and country, not a reproduction of any other. Even the much abused Renaissance was genuine, inasmuch as it was the actual product of the mind of the time: based on early styles, but not a copy of any. With us, style, whether mediæval or classic, is commonly a mere excrescence or incongruity as applied to a building erected for the special objects and requirements of English life in the last half of the nineteenth century, however appropriate it may have been to the habits and sentiments of the ecclesiastics, and possibly of the people of the thirteenth or fourteenth century, or to the current ideas of Italian artists, and cognoscenti in the fifteenth or sixteenth century; in either case it is an anachronism now, whether regarded in its structural features or ornamental details.

Some such feeling seems to be slowly forming with reference to the projected Courts of Justice. Mr. Street has remodelled his design, and, whilst it is positively asserted that the new design has not been approved by the authorities, the foundations are being laid; yet the leading organ of public opinion has been unequivocal in its condemnation of the design, and is urging with all its might that it is even now "the duty of the Government to reserve the question [of its erection] for consideration by Parliament." It adds, "the construction of the foundations on the selected site may very well go on in the meantime, so that the delay, after all, need not materially retard the ultimate completion of the work." This last sentence is a fair illustration of the hazy notions commonly held respecting architectural design. In one line we are told that the "amended design is *entirely* unsatisfactory, as unworthy of acceptance as the original scheme," and

is to be cast aside without hesitation and an absolutely new design obtained, and then that while the new design is being prepared, the construction of the foundations may be proceeded with, as though the foundations were no part of the design, instead of being its very pith and essence, that on which its character should mainly depend, and which should mould and colour every part of it.

Our opinion of Mr. Street's former design was expressed very plainly. We have little more hope of the amended design. The original design would have made the Courts of Justice resemble a huge monastery; the amended design, with its endless gables, pyramidal roofs, towers, turrets, spires, pinnacles, rose and lancet windows, brackets, parapets, canopied statues, and the like, will have the aspect of an overgrown and over-decorated college. In the amended design, the Strand front is 500 feet long, space enough for one of the noblest façades of the century. If not further amended, it promises to be a congeries of small prettinesses. In order to avoid monotony, Mr. Street has sacrificed symmetry; or it may be that what seems excessive irregularity of arrangement has been devised with a view to achieve picturesqueness. A grave mistake. It is easy to produce irregularity, but the picturesque is never made. It is the result of time and accident; of growth and decay. To set aside the design, or, rather let us say, the architect, now, is however not a thing to be thought of. Mr. Street, with all his peculiarities, is a true artist, as well as a skilful architect. The Government may well say to him: "Your design is very generally disapproved. Consider carefully the objections that have been made to it. Take a reasonable time to study again the whole problem. See whether both plan and elevation cannot be remodelled; bearing in mind that the requisites are—the utmost attainable convenience in the one, simplicity, unity, dignity, in the other." If Mr. Street would do this, it is not yet too late for him to design a building in his favourite Gothic, that shall be appropriate, dignified, noble; worthy of his own reputation, of the purpose, and of the country. It would doubtless cause some mortification again to reconsider his design; but he has good precedents. Wren saw his favourite design for St. Paul's ruthlessly superseded, and at once commenced another on the plan imposed upon him; or if that be too distant, he may remember that the late Sir James Pennethorne had to make a third design for the London University, and on the last occasion succeeded in satisfying almost everybody. Far better for the architect to do thus than have his name associated for ever with an unsatisfactory building. And this is a building that will be one of the largest and most important in London, and occupy one of the most conspicuous sites. If any labour can render it worthy it should be bestowed upon it.

Of the other national buildings it will be enough to make a very brief report. The new Home and Colonial Offices advance but slowly: we shall have long to wait before we can judge of their effect. The new General Post Office is proceeding far more

rapidly. Already its general character is fairly developed. What was proposed we stated last year, and the building, as far as it has proceeded, agrees very well with the description. The principal front in St. Martin-le-Grand will be nearly as long as the General Post Office, opposite which it is being built. It will be four storeys high, of Portland stone on a granite basement, the pilasters of the first two storeys Tuscan, of the upper storeys Roman Corinthian. The chief entrance is by a central portico, not very imposing from its proportions or design. On the whole we see little cause thus far to modify the opinion expressed in anticipation. In laying the foundation stone, the Commissioner of Works announced that "in the design and construction of the building he had not allowed ideas of fancy or of taste to be made paramount to the demands of public utility." The sins of fancy or of taste are as little likely to be charged against the New General Post Office as against the Commissioner; all we can hope is, that the demands of public utility will be satisfied by the internal arrangements.

Little more has been done to the Record Office, but the Commissioners have given notice of their intention to take the land and houses necessary for constructing the Chancery Lane portion of the building, which will thus for the first time be brought properly into public view. A like notice has been given as to the land required for a new Mint, on the erection of which the well-known building on Tower Hill will be sold or pulled down. The new Mint will occupy a site between the Thames Embankment and Whitefriars, bounded east and west by the premises of the City Gas Company and of Messrs. Powell the well-known glass manufacturers. For the extension of the National Gallery a large space has been cleared in the rear of the present building. That some such extension was imperatively required was evident when it was found necessary to remove the pictures from one of the principal rooms to admit the newly purchased Peel collection; but long before that purchase increased the need for further space, a large proportion of the British and some foreign pictures were either not hung or relegated to South Kensington, in consequence of there being no room for their exhibition at Charing Cross. How far the projected extension is part of a comprehensive scheme, whether Mr. Barry's designs will be followed, or what is to be the character of the additional building we are ignorant. The spacious Italian structure erecting from the designs of Messrs. Banks and Barry, on the Piccadilly side of Burlington House, for the use of the scientific societies, though it has made considerable progress, is not sufficiently advanced, and too much encumbered with scaffolding, to allow of fair judgment. The construction of the new Museum of Natural History, which is to occupy a portion of the site of the International Exhibition of 1862, has not been commenced.

Nearly opposite to it, however, a building which presents some novelty of appearance has challenged, and doubtless secured, the attention of visitors to the International Exhibition of 1871. It

is to serve for the Science Schools, and forms a part of the South Kensington Museum, as originally designed by the late Captain Fowke. The new building, which we suppose will eventually form one of the advanced wings of the Museum, is a block of considerable magnitude, having a frontage of 186 feet by 96 feet high. It is constructed of red brick and terra-cotta, and appears to be a model of good workmanship. The novelty in the construction is the extent to which terra-cotta has been employed; the chief novelty in the design is the carrying out, on terra-cotta brackets, or cantilevers, of an ornamental arcade, as the highest or attic storey. The building is four storeys high, with slightly advanced wings. The ground floor in the central portion has a deeply-recessed arcade, corresponding to that in the upper storey, but whilst the lower arcade has only seven arches, the upper has twenty-one. The effect of both is decidedly good. The lower arcade gives mass and dignity, the upper lightness, and both afford strong play of light and shade. The terra-cotta shafts, arches, brackets, cornices, medallions, and ornamental details generally, conduce to the general richness, and harmonize sufficiently in colour with the deep red brick. Moulded work is, of course, less effective than the work of the chisel, and these terra-cotta blocks do not appear to have been always fired successfully. But whatever drawbacks be admitted, it cannot be doubted that terra-cotta promises to be a valuable addition to the architect's treasury of decorative materials; and if it should be found not to blacken or discolour seriously under the influence of a metropolitan atmosphere, it may greatly assist in modifying and enriching our ordinary street architecture. The building before us was erected under the superintendence of Major-General Scott, to whom the credit of its present aspect and character must be assigned: the general plan is that of Captain Fowke. Only the exterior of the building is finished.

Major-Gen. Scott holds nearly the same position with reference to the neighbouring International Exhibition Building and Royal Albert Hall that he does to the Science Schools. The general plan was Captain Fowke's, but he lived to do little more than prepare the broad scheme; the execution of it, the modification as well as the embodiment of it, the structural and ornamental details, and the actual erection were the task imposed upon Major-General Scott. The plan of the International Exhibition permitted of no external architectural character, and entailed the long, scrambling, wearisome arrangement of rooms. More might doubtless have been done for internal effect, but it was determined, not unwisely, to concentrate the interest as far as practicable on the objects exhibited. Another year something might be done to display those objects better, and, either by improved arrangement or something less imbecile than this year's catalogues, render the search for particular specimens less hopeless. It would be idle to dwell on a structure which everybody has seen and made up his mind about. Enough that we give a passing word of commendation to the general appearance and

quiet good taste of the rooms, and to the lighting of the picture galleries. But these galleries are too narrow to admit of pictures on the walls and sculpture and nick-nackeries in the centre. So filled the rooms may have a pretty general effect when only a few visitors are present; but on ordinary days during the past exhibition passage was uncomfortable, pictures of any size could only be seen with difficulty, and then imperfectly, and the sculpture could scarcely be seen at all. Another year the picture galleries should be confined strictly to pictures, with merely settees in the centre for the convenience of visitors; and if sculpture be exhibited it should be in rooms appropriated to the purpose, where the several specimens should have ample room for their full and individual display without distraction from incongruous surroundings. So only can good sculpture be studied, understood, and appreciated.

The Royal Albert Hall has steadily won its way in public favour. Its unusual form, size, and character, and certain sharp criticisms, combined with some shortcomings almost inevitable in the haste with which it was hurried to a conclusion for the opening of the exhibition, rendered the majority of visitors timid in trusting to their own impressions. Undoubtedly there were at first palpable acoustic faults, and the grand object of the building was to provide a vast auditorium; but these faults have been remedied, or if any remain there is every reason to expect that they may be got rid of. Up to the close of the exhibition there can be little doubt that in this respect there was continuous improvement. By the courtesy of Major-General Scott we were enabled to test the acoustic properties of the hall from every part we chose, and the result seemed in each instance satisfactory, with the exception, perhaps, of the gallery, and even there persons more happily organised pronounced the effect good. But the conclusion to be drawn is, we apprehend, as might be anticipated from the vast size and form of the hall, that it is for grand gatherings and great orchestral and choral effects that the hall is mainly fitted. Concerted music of a high character, whether vocal or instrumental, bears out, so to speak, magnificently, and best of all where both are combined. Solos require the exceptional organ of a Titiens or Alboni, a Reeves or Santley to fill satisfactorily the immense area; a voice of ordinary power, however pleasing in a concert room, is lost here, and where the enunciation is imperfect or the music is common-place, is almost painful.

The appearance of the interior when well filled—and that is the proper time to form a just opinion of it—is certainly very fine. The form is eminently pleasing, the proportions are good, and the *ensemble* impressive. The very abstinence from ornament adds to the grandeur. Something more in the way of colour, with gilding judiciously, not lavishly, used, would help to impart the brighter and richer tone which such a hall seems to require; but we dare say this is among the matters left for more leisurely consideration and completion.

It is a necessary consequence of the form that the exterior should be less effective than the interior. If it could be properly seen, however, the mass would convey the impression of grandeur. And there can be no doubt that it was right, architecturally and artistically, not to endeavour to evade or conceal the form, but rather to give to it all due emphasis. On the whole, there is not much to complain of in the treatment of the exterior. One might desire more breadth and largeness of handling, however difficult to secure. The terra-cotta decoration is too small and pretty for the size of the building, and the frieze still more inadequate. But the decoration was evidently experimental, and savours of South Kensington experiments. The good effect of the porches, especially when they are seen far enough off for the ornamentation to lose its obtrusiveness, shows how much may be gained by massiveness and simplicity of handling.

Before quitting the Albert Hall we must express a hope that before next year a thorough change may be made in the approach from the Exhibition building. The convergence of the visitors from the two lines of galleries upon the single small and inconvenient conservatory entrance, produced scenes that were at best unseemly and undesirable, and might be dangerous. Something, too, might be done to render the access to the several parts less puzzling to a stranger, and the egress easier.

The Albert Memorial, on the opposite side of the road, is advancing, though little progress is visible. With every passing month, however, the regret becomes stronger that it was necessary to uncover the upper portion so long before the lower part was finished, since the feeling is necessarily deepened of its resemblance to a magnified metal and jewelled reliquary rather than a majestic stone structure.

Although no apparent progress has been made with the Wellington Memorial, it is some comfort to know that a way has been found out of the legal and other difficulties between the Commissioner of Works and the sculptor, and that Mr. Stephens will himself carry forward the work,—we may hope to an early and amicable, even if it be not an altogether satisfactory, conclusion.

It is proposed to erect some dozen or more statues of statesmen in the open enclosure once known as Old but now called New Palace Yard, and a cast of one of Cromwell was set up by way of experiment. Whether, after refusing him a place within the palace, the Great Protector will be permitted to stand outside the doors we are not told; but it is a good statue, and ought to find a place somewhere. Marble busts of Lord Brougham and the Earl of Derby have been set up by the citizens of London in the Council Chamber of the Guildhall.

A bronze statue of General Sir James Outram by Mr. Noble has been erected in the ornamental grounds of the Thames Embankment, and warmly praised by the journals; but it is raised too high to permit the features to be scanned, and the rest of the figure will hardly arouse enthusiasm. But statesmen

and warriors are not the only men now honoured with statues. The range of bronze and marble memorials is manifestly widening. A bronze statue of Brunel has found a temporary position not far from the statue of Outram, and another of Stephenson has been erected by the North Western Railway Company in front of their Euston Square terminus.

2. Public and Sanitary Works.

The Thames Embankment is still an incomplete work. The main portion, from Blackfriars Bridge to Westminster, was opened more than a year ago, but has even now an unfinished look; whilst the roadway, from Blackfriars to Cannon-street, remains only partially opened. Some few additional feet have, however, been added to it since we last wrote, and the remainder is promised by Lord Mayor's day. When that day arrives there will be a broad way from the Mansion House to the Houses of Parliament, and the full value of this noble work will be appreciated. Side ways from Whitehall and the Strand have been opened on to the Embankment, and have added much to its usefulness both for pedestrians and carriages; but the bit of unfinished road on the east spoils it for the present as a thoroughfare. After a hard struggle portions of the reclaimed land, east and west of the Charing Cross bridge, have been appropriated as public gardens, and already afford a pleasing relief to the eye of the passenger, and are evidently enjoyed by those for whose use they were designed. But a screen of stately buildings is wanted to shut out the unsightly backs of the mean houses which for a large part of the way disfigure the view. It would be a grievous pity were this magnificent road to be lined with common-place terraces; mischief enough has already been done to it by the wretched stations of the Metropolitan District Railway. The experiment of planting trees along the sides of the road seems likely to be successful.

A commencement has been made with a new embankment, which will extend from Chelsea Hospital to Battersea Bridge. It is being executed under the direction of the Metropolitan Board of Works, from the designs of Mr. Bazalgette, their engineer, and will be similar in character to the portions already completed, but less costly in construction, and less elaborate in finish. When completed there will be an almost continuous embankment along the northern shore of the Thames from Blackfriars to Battersea, a length of over four miles, with a broad public road the whole way, with the exception of about a quarter of a mile by the Houses of Parliament. The Chelsea Embankment will reclaim 9½ acres from the Thames, which will be occupied by a roadway 70 feet wide, and by ornamental grounds. It is expected to be completed by the end of 1873.

The main drainage of the Metropolis still awaits the junction of the low-level sewer; but the work already accomplished is amazing. Colonel Hogg, the chairman of the Metropolitan

Board, stated the other day, that "during the last 15 years 400 miles of sewers had been made in the metropolis, under the direction of Mr. Bazalgette, at a cost of six millions. That was in addition to 700 miles of connecting sewers which had been laid by the local boards and vestries." Eleven hundred miles of drains are sufficiently surprising, but it is only when we recollect the largeness of scale, the engineering difficulties which had to be surmounted, and the solid manner in which the great sewers have been constructed, that we can fairly comprehend the magnitude of the work that has been accomplished. Two things only are now wanting in this connection to satisfy the sanitary requirements of the metropolis. One is, that the sewage carried from London by this gigantic system of drains shall not continue to be emptied into the Thames to pollute and poison the stream, but be turned to profitable use on the land; the other, that the water-supply shall be rendered pure and adequate to the requirements of the population. An Act was passed last session, which will tend to improve the supply, but the time has come when the question of the water-supply of London, both as to quality and quantity, should be honestly grappled with, and a really comprehensive scheme carried out.

The improvements which the city authorities are making in connection with the Holborn Viaduct have proceeded steadily during the past year, and the system of streets on either side is developing to advantage. Especially useful promises to be the broad street from the Fleet Street end of Farringdon Street to the west end of St. Andrew's Church, Holborn. At each end of this street will be a "Circus," supplying the centre into which several lines of traffic will pour. The form is effective in reality as well as in the ground plan, but whether it is the safest or most judicious with so vast a traffic of foot passengers and carriages as will there be brought together may be questioned. Certainly the most careful police supervision will be required to ensure safety of life and limb. Holborn Circus is to be adorned with an equestrian statue of the Prince Consort, for a pedestal to which the Corporation has just voted a sum of £2,000. The Fleet Street Circus will probably be thought to be sufficiently adorned by the railway bridge which there spans Ludgate Hill. For the new street the west side of Farringdon Market had to be removed, and the city engineer took advantage of the opportunity to alter the level, and in a measure remodel the market; and now a proposition has been made by some of the wholesale dealers and warmly supported by the City, to remove the vegetable and fruit market from Covent Garden to Farringdon Market, which is to be enlarged and thoroughly adapted to the purpose. For Covent Garden to migrate to Farringdon seems almost too revolutionary even for this age of changes; if it should take place it would not be among the least remarkable of the many curious transformations that have occurred of late in noted London localities. Another important project in connection with the Holborn Improvements is the construction of a great Central Railway Station on the

grounds of the London, Chatham and Dover Company bordering the viaduct, which is to serve as a connecting station for all, or nearly all the great lines both north and south of the Thames. Some such station has long been wanted, and the situation is perhaps as convenient as any that could be found.

Other metropolitan improvements in opening new streets and widening old ones, and generally in the way of facilitating traffic, have been carried out, and several are in contemplation. One of the most useful will be the formation of a broad thoroughfare from Charing Cross to the Tottenham Court Road, which will afford a much needed direct communication from north to south, but several additional wide streets between Holborn and the Strand are also required. The introduction of asphalte pavement is a minor, but valuable improvement, and one that seems likely to spread rapidly. The use of tramways has extended considerably, perhaps as much as is desirable at present; if they are to become general they should be laid down on a well-considered system, and be under municipal or other central control.

Of railways it will be enough to note the progress. According to the latest returns there were in October 1871 in operation in the United Kingdom, 13,971 miles of railway, being an increase of 243 miles since the corresponding week of 1870. But this does not include all the lines in operation. In the fuller and corrected returns to the end of 1870, there were in operation 14,610 miles, and 250 miles have been since completed. Taking the returns of the past 20 years as our guide, we may venture to say broadly that we have now nearly 15,000 miles of railway in operation, and that they are increasing at a rate averaging about 250 miles a year. The capital expended on these lines to the end of 1870 was 504,381,000*l*. The traffic receipts for the year amounted to nearly forty-four millions. Many of the recent additions have been of branches, or lines made to improve or shorten existing lines to important centres. The number of independent new lines has not been great, but some considerable works are in progress.

At last the importance of preserving what is left of the forests, heaths, and open spaces around London has been practically recognised. In the Companion to the Almanack for 1866 an account was given of the then state of Epping Forest with a sketch of the progress of enclosures; and the imminent danger of continued encroachments, notwithstanding a resolution of the House prohibiting the further sale of Crown rights, and a later recommendation of a Committee that measures should be adopted to vindicate the Crown's forestal rights and to abate enclosures, was distinctly pointed out. Unhappily the rights were not vindicated, and the encroachment went on. The sense of wrong at length grew too strong to be resisted, and now what is left of Epping Forest is put under sufficient control, and will doubtless be saved; its history, however, will remain one of the darkest blots in our departmental administration. Hamp-

stead Heath is also secured; and the commons of Wimbledon, Wandsworth, and Putney have been formally appropriated to the public on payment of a specified rent to the lord of the manor. The cost of securing and maintaining these "open spaces" may be heavy, but cost in a matter like this is a subordinate consideration. London has become a province of houses with the population of a small kingdom—a Scotland in a ring-fence—and a large provision of open country, fresh air, and free recreation grounds immediately outside the great city, as well as in its midst, is absolutely necessary if the millions of its inhabitants are to be kept in health and vigour.

And what is essential for London is proportionately so for every other large town, a fact which is happily being generally recognised. We have not every year to record the completion of important people's parks, like Stanley Park, Liverpool, and Alexandra Park, Manchester, noticed last year, but we are not without valuable signs of progress. Thus at Congleton a park of twenty-one acres, including eight acres of woodland, a terrace a quarter of a mile long, a bowling-green and cricket-ground, is approaching completion; it is pleasantly situated by the river, which will afford facilities for boating. A park is also likely to be provided for Staleybridge and Ashton-under-Lyne, of which the Highfield estate will form the nucleus, the Earl of Stamford, to whom it belongs, having offered it on easy terms for the purpose. Sir Titus Salt has rounded off his public and private works at Saltaire by the formation and dedication to public use of a pretty little park of fourteen acres, and it is worth adding that, in recognition and acknowledgment of all that he has done for them, the inhabitants of Saltaire had a full length portrait of the donor painted by Mr. J. P. Knight, R.A., and presented it to him at a meeting called for the purpose. Finally, the corporation of Leeds have just purchased the Roundhay estate of 1,400 acres, of which the mansion, park and lake, comprising 600 acres, are to be appropriated as a public park. Roundhay is two miles from Leeds, but a contiguous property has also been bought, which will bring the entrance half a mile nearer the town. The two estates cost 139,000*l.*, a handsome sum for a corporation to set apart for such an object.

The trustees of the Peabody Fund have completed another of their series of industrial dwellings, Peabody Square, on the site of the old Magdalen Hospital, Blackfriars Road. It consists of sixteen blocks, having a general resemblance to the earlier buildings, but with a more cheerful aspect, and with improvements suggested by experience. It provides 320 dwellings at rents ranging from 2*s.* 6*d.* to 5*s.* a-week. Other establishments are building under the direction of the same architect, Mr. H. A. Darbishire. The Improved Industrial Dwellings Company have built some, and are building more of their establishments at different parts of London; their total expenditure has now nearly reached 200,000*l.*, which produces a rental of about 8,500*l.* per annum, and enables them to pay a dividend of 5 per

cent. to their shareholders. Several other societies are doing good work in this way, but these will suffice as examples.

The Baroness Burdett Coutts has erected another large and costly drinking fountain for the use of the London public. It stands opposite the principal entrance to the Zoological Gardens, Regent's Park; is of granite, marble, and bronze, with statuary and carving, and is surmounted with a cluster of lamps, while from the basins numerous jets of water spring upwards. The architect was Mr. Darbishire, who has succeeded in producing a bright and novel design. Another, of a more architectural character, designed by Mr. F. Butler, is in course of completion opposite the entrance to St. Bartholomew's Hospital, Smithfield. The Marquis of Bristol has erected a handsome fountain by the Corn Exchange, Bury St. Edmunds; the Baroness Weld has presented one of marble to the town of Newbury, Berks; the Mayor of Canterbury, one to that city, and others of an ornamental character have been erected at Frome, Bedford, Stansted Mountfichet, and elsewhere.

3. Churches and Chapels.

The general remarks with which we commenced this paper apply to the ecclesiastical as much as to the secular architecture of the day, it being borne in mind that our new churches are, as they have been for years past, exclusively Gothic. As to the kind of Gothic at the moment in favour, we can only repeat what was said last year, and in the passage just referred to. It is Gothic of diverse descriptions, though that of the thirteenth century is the favourite model, and it is usually more or less foreign in character. Brick is an increasingly favourite material, and where it is not used for the exterior the inner walls are frequently lined with it. Irregularity of outline is more than ever in fashion, churches now being nothing if not picturesque. In the interiors carving and colour prevail very generally, the strength of pigments, costliness of materials, and elaboration of ornament culminating properly enough in the chancel or sanctuary, and on the altar and its accessories. The effect is not always harmonious, and not often artistic, but the work, we are assured, is to be judged not by the rules of art, but of symbolism. "We architects," writes an earnest mediævalist,* who was put forth at the Architectural Conference to expound certain points of architectural and especially of altar symbolism, "we architects should infuse a symbolic spirit into the minutest details of all sanctuary work, even in the dimensions of the altar itself. I recommend my brother architects in no case to carry out an altar less than 7 ft. 5 in. long (both symbolical numerals), and when possible to exceed this length to let the mystic number 5, so closely associated with altar ritual, determine *in the inches* the exact length of the slab." This "symbolic treatment" is to rule throughout, and thus afford to the church "that peculiar aid

* 'Builder,' June 17, 1871.

which the architect alone, of all laymen, can lend her;" a fact which should temper our judgment of ecclesiastical architecture and art-work generally. Where something occurs harsh or grating to the secular sense, who can tell but it may be a symbolical numeral, colour, or form, and so be a thing to be honoured rather than condemned?

Instead then of coldly criticising, we will accept our ecclesiastical art-work as we find it, and proceed to tell what has been lately done in that line. In and about London several new churches have been built. Eccentricities of design are displayed in some of them, but for the most part they maintain the level of quiet respectability. One of the most successful attempts to combine ritualistic proprieties with convenient arrangements for a large congregation to both see and hear the preacher, in a church of inexpensive character, is St. Jude's, Earl's Court, Kensington, designed by Messrs. G. and H. Godwin. The church, which affords accommodation for a congregation of 1,600, is early Second Pointed in style, is faced externally with Kentish rag, while the interior is lined with coloured brick; consists of nave, transepts, and chancel, and has an open roof of very high pitch. Its convenience as an auditorium to which we referred, arises from the congregation being brought into contiguity with the pulpit by means of broad double transepts, and the nave arcades being carried upon light iron columns, which offer little obstruction to the sight. St. Matthew, Hammersmith, a brick church in Mr. Blomfield's familiar variety of First Pointed, is also well arranged for congregational purposes, if it has not beauty of form. St. Michael and All Angels, Notting Hill, is noteworthy as a church which is not Pointed Gothic, but Romanesque in style. The building is of brick, the ornament of terra-cotta, and the architects, Messrs. Edmeston, have perhaps made as much as possible of the materials at their disposal. But at present the church has an unfinished, and necessarily somewhat cheerless aspect.

Turning from the extreme west to the extreme east of London, we find in St. Matthew's, Commercial-road, Stepney, a large brick church, built for a congregation of 1,000 persons, and rather to be commended for usefulness than elegance. The only part of the exterior seen, however, is the gable end facing the road, which has on one side of it a plain square tower with a roof-spire. The style is late French First Pointed, with plate tracery; architects Messrs. Newman and Billing. Christ Church, Victoria Park, South Hackney, is another plain brick church, built to accommodate a congregation of 700, chiefly of the labouring class.

On the south, St. Stephen's, Walworth Common, is a more ambitious structure. Like those just noticed it is of brick, but has terra-cotta ornament, as well as Bath stone in capitals and dressings. The style is First Pointed, but of Italian type. The church has nave with aisles, chancel with trilateral sanctuary, and an external arcade with stairs and gallery. The clerestory is borne on four Portland stone columns, and carries a close-

boarded roof of high pitch. The seats, 750 in number, are all free; the cost was over 7,000*l.*; architects Messrs. Jarvis. The representative church of North London is even more pretentious. St. Stephen's, South Hampstead, is in what may be called the Early French Pointed, but it exhibits in the fullest manner, Mr. Teulon's well-known peculiarities—the tower even surpassing in ugliness the worst native French example. It is of dark brick with rough stone bands; is cruciform in plan, with, at the intersection, a large square tower the lower part of which serves as chancel, and a shallow polygonal apse as sanctuary. The windows of the clerestory, transepts, and apse are pointed, of the aisles square-headed, in the west end a large rose: all have plate tracery. On the porches and elsewhere are well carved statues of angels, &c. The church stands on sloping ground, and the exterior is studiously irregular in outline and un-English in character, and appears strangely out of keeping amidst the noble old elms which surround it. The interior is light, rather striking in effect, and is intended to be highly decorated.

A church with some specialty of purpose has been consecrated in St. John's Road. St. Peter's, Clerkenwell, or as it is otherwise called, the Smithfield Martyrs' Memorial Church, was built by subscription as a memorial of the Reformers who suffered for their faith in Smithfield, and on the nearest obtainable site to the scene of their martyrdom. The purpose one cannot but respect, and the church is carefully and well constructed: yet it would be difficult to find a more striking illustration of the absurdity of our present ecclesiastical style, or want of style. Nothing would appear more obvious than that such a church should be simple, grave, and unpretending in aspect, and unmistakably English and Protestant in character. This, on the contrary, is complex in plan, irregular in outline, overlaid with feeble, unnecessary ornament, French Gothic in style, and ultra-Catholic in feeling. It is built of stock brick, with bands of coloured brick, and shafts and dressings of Mansfield and Ancaster stone. In plan it is cruciform, but one transept serves as an organ chamber, the other for a vestry. The nave runs into an apsidal chancel; the aisles into apsidal chapels—the purpose of which, in a Protestant memorial church, is a mystery—or perhaps a piece of profound symbolism. Externally the several parts are of different heights, and the diversity is increased by a tower on the north-west, which bulges out into a projecting upper storey, with a fantastic array of pinnacles and purposeless buttresses, the whole being crowned by a pyramidal roof. The memorial purpose is marked externally by statues of the principal martyrs on the front of the church and in niches of the tower buttresses, and by *rilievi* of their martyrdoms on the gables. Inside, inscriptions, giving the names, dates of death, and declared crime, are painted along the side walls on imitation hangings; if the manner be allowed, the inscriptions are appropriate and not too obtrusive. For congregational purposes, the interior is quite equal to the average of recent town churches. Symbolically and

ecclesiologically the building may be perfect, but for any special adaptation to its purpose as a Martyrs' Memorial Church it appears to be the strangest conception that ever entered into the heart of man.

Several of the new country churches would repay particularisation, but our notice of them must be brief. Some of the most remarkable are those which have been erected by individual liberality. Highclere, Hants, designed by Mr. G. G. Scott, R.A., and built by the Earl of Carnarvon, in place of the often-mended old church, is one of the architect's familiar First Pointed French Gothic edifices. A comparatively small cruciform church, every part is admirably wrought; the ornament is sufficient without being excessive, and the whole has an air of lordly dignity and quiet good taste. Mr. G. E. Street, R.A., has completed three small country churches for Sir Tatton Sykes—one at Thixendale, a good plain First Pointed building for 150 people; the others of a similar order, at Fimber and Helperthorpe, all in the East Riding of Yorkshire; whilst the munificent donor has laid the foundation stone of another church at Weaverthorpe.

One of the most magnificent of these presentation churches is that erected on the site of the old parish church of Bolton, Lancashire, by Mr. Peter Ormerod, at a cost of upwards of 50,000*l*. The building is of considerable size (nave, 114 feet long and, with aisles, 67 feet wide, chancel 42 feet by 28), Second Pointed in style, with elaborate tracery in the windows, a good deal of careful carving, and richly decorated throughout. The east window of seven lights is 35 feet high, and filled with painted glass by Hardman; the west window of six lights is also large; the tower on the north is 142 feet to the top of the parapets. By those who have seen it, the church is described as a very noble one. The architect was Mr. E. G. Paley, of Lancaster. Worthy to be ranked with this, is the new church of St. John the Evangelist, Hightown, Cheetham, erected (with parsonage) by Mr. Lewis Loyd, at a cost of over 20,000*l*. The church is First Pointed in style, of stone, lined with brick, and will accommodate 540 persons. Hook Church, Hants, a neat First Pointed building, designed by Mr. Raphael Brandon, for a congregation of 300, has been built at a cost of about 4,000*l*. by Mr. A. Hornby, of Hook, who has also provided it with an endowment of 300*l*. a year, added a parsonage and glebe, and is about to build schools. The same architect has also just completed a pretty little church at Bayham, Kent, for the Marquis Camden, its appearance being not a little enhanced by the charming site it occupies in Bayham Park, close to the picturesque ruins of Bayham Abbey. The Marquis of Westminster has erected an elegant church for a congregation of 300 at Hindon, Wiltshire. It is French First Pointed in style, and was designed by Mr. T. H. Wyatt. The parish church of St. Michael, Otterton, Devonshire, has been rebuilt at a cost of over 8,000*l*. by Lady Rolle, being the third erected by her in this locality. Otterton Church was designed by Mr. B. Ferrey, generally in accordance with the character of

the old church, and is said to be a graceful building: the carved capitals (of the local fruit and flowers) are especially admired. St. John the Baptist, Tuebrook, Liverpool, has been erected at a cost exceeding 15,000*l.* by the Rev. J. C. and Mrs. Reade, from the designs of Mr. Bodley. The style is early Second Pointed, a good deal enriched, especially in the chancel, but the reredos had to be removed before the Bishop of Chester would consecrate the church. Of the exterior the most striking feature is the tower, which with its spire is 180 feet high.

As in former years, we refer the other new churches to a list arranged under First Pointed (agreeing generally with the Early English), and Second Pointed (or Decorated) styles. When not otherwise stated, the church may be understood to consist of a nave and aisles, chancel, vestry, and tower, or tower and spire; unless it be a small church, when it will ordinarily have only nave and chancel, with a bell-turret instead of a tower.

Among the churches First Pointed in style are:—St. Mark's, *Stamberhill*, Stourbridge; of brick with freestone dressings; apsidal chancel; vestry on the north side; 400 sittings, cost 2,000*l.*; architect, Mr. T. Smith, of Stourbridge. St. Silas, Barmston Street, *Hull;* of red brick with blue brick bands; nave arcade of parti-coloured bricks, borne on Bath stone columns; 650 seats; cost 4,000*l.*; architect, Mr. S. Musgrave, of Hull. *Gorefield*, a neat little church for 250 persons; of brick faced with flint; erected by Mr. E. B. Sparke as a memorial of his father the Rev. Canon Sparke, rector of Leverington, from the designs of Mr. F. Preedy. St. John the Evangelist, *Aldecar;* a plain church of Mansfield stone, for a congregation of 250; architects, Messrs. Stevens and Robinson, of Derby. *Brightridge*, Southborough, Kent, of local stone, with Bath stone dressings, the interior being lined with red bricks; chancel and transepts only built, leaving nave and tower to be added when practicable; 350 seats, cost 2,400*l.*; architect, Mr. T. K. Green. St. Michael and All Angels, *Cadmore*, Walsall; of local freestone, with Bath stone dressings; nave and chancel only, leaving aisles to be added at a future day; 325 chairs, all free; cost 2,500*l.*; architect, Mr. Veale, of Wolverhampton. All Saints, Harlow Hill, *Harrogate;* small, but with a tall spire; continental in character; architects, Messrs. Shutt and Thompson. *Speldhurst*, near Westerham, Kent; of local stone; the details late in character and the ornament ample; 450 seats, cost about 4,500*l.*; architect, Mr. J. O. Scott. *Great Wollaston*, Middleton, Shropshire; for 200 people; architect, Mr. E. M. Goodwin. Holy Trinity, *Shaw*, near Oldham; has nave with three aisles. and chancel with side aisles; will accommodate 750 persons, and cost 9,000*l.* *Harswell*, Market Weighton, Yorkshire: built as a memorial of Sir C. Slingsby on the site, and partly in the Norman style, of the old church, but larger in size; architect, Mr. J. Fowler, of Louth. Christ Church, *Barnston*, Cheshire; of white freestone; consists of nave, chancel, and organ chamber, and has an open timber roof of high pitch; cost 2,000*l.*; architect,

Mr. G. E. Street, R.A. St. Philip, *Heigham*, Norwich; of flint, with Corsham stone dressings; French in character; has narthex at west end, and tower at north-west angle, on which is to be placed a spire 140 feet high; 775 seats; cost about 3,500*l.*; architect, Mr. E. Power. *Abergwessin*, Llanwrtyd Wells; a small but substantial and handsomely fitted cruciform church; of local stone, with Greenhill and Cefn stone dressings, lined internally with red Suffolk bricks; circular window, twelve feet in diameter at the west end; lantern tower at the intersection of the cross, surmounted with a short square spire, in all about 70 feet high; 120 seats; cost about 4,000*l.*, defrayed by Mrs. and Miss Thomas, of Llwynmadog; architect, Mr. J. Withers. St. John the Baptist, *Lynmouth*, Devonshire; a neat structure; designed by Mr. E. Dolby. St. Mark's, Belgrave Gate, *Leicester;* tower and spire 180 feet high, the gift of Mr. W. P. Herrick, of Beaumanor Park, Loughborough; architect, Mr. E. Christian. *Hurstwood*, Buxted, Sussex; of local stone; nave, north aisle, and apsidal chancel, and bell turret over west gable; cost about 3,000*l.*, defrayed by Colonel and Lady Harcourt; architect, Mr. G. E. Christian. All Saints Perry Street, *Northfleet*, Kent; of Kentish rag; bells in turret over chancel arch, and so arranged as to be rung from choir steps; internal arrangements highly ritualistic; architect, Mr. J. Brooks. *West Malvern*, in place of the old church, a good plain building for 500 persons; architect, Mr. G. E. Street, R.A., who has also completed a church at *Thurgoland*, near Sheffield. St. Matthew, Anlaby Road, *Hull*; of white or red brick; 800 sittings; cost 4,500*l.*, but the tower and most of the carving were left for execution at a future day; architects, Messrs. Adams and Kelly, of Leeds. *Bridlington Quay;* designed by Mr. R. G. Smith, and erected at a cost of 7,000*l.*, chiefly defrayed by the Rev. Y. L. Greame and his family. St. Peter, *Newbold*, near Rochdale; of local rubble stone, with red brick bands, strings, arches, and buttresses; narthex, nave with aisles ending in priests' and choristers' vestries and organ chamber, chancel with semi-hexagonal apse; baptistery at the north-west: tower at south-west, which is to be surmounted with an octagonal brick spire 135 feet high, when funds admit; 670 sittings; architects, Messrs Medland and Taylor.

Churches, Second Pointed in style, have been erected, among other places at—Lonsdale Street, *Carlisle* (St. Paul's), of red Newbiggen stone, with clerestory having circular windows, and very high-pitched roofs; tower and spire to be built at a future day; 600 sittings, cost 3,700*l.*; architects, Messrs. Habershon and Brock. St. Andrew's, *Hastings;* nave, south aisle, and apsidal chancel; 450 seats, cost 3,600*l.;* architects, Messrs. Habershon and Brock. All Saints, *Woodlesford*, near Leeds; of Oulton stone; cruciform, with tower and spire, 140 feet high, by the south transept; chancel and transept arches borne on columns of Devonshire marble; open timber roof, choir seats and priests' stalls of carved oak; east and west windows of painted glass;

architects, Messrs. Perkin and Son. All Saints, Hesketh Park, *Southport;* large circular west window, the tracery, as in all the windows, of early character; with gallery, will accommodate 600 persons, but capable of extension; architect, Mr. J. Sidebotham. St. Peter's, *Gunby*, near Spilsby, Lincolnshire; a very good village church, with a long chancel, south porch, and battlemented and buttressed tower at the west end; architect, Mr. J. Fowler, of Louth. St. Luke, South Park, *Reigate;* of local stone, with Bath stone dressings; nave, chancel, and south aisle, with organ chamber and vestry over it; north aisle, &c., to be added when funds are obtained; 300 sittings; cost about 2,500*l.;* architect, Mr. J. Lees, of Reigate. *Middleton-one-row*, Durham; small, but pleasing in appearance; has an octagonal tower at the south-east angle, which will be crowned with a spire when sufficient funds are obtained; 220 seats, cost 1,500*l.*; architect, Mr. J. P. Pritchett. St. Andrew's, Eastbank-street, *Southport;* cruciform, with tower and spire on the north-east; 1,000 seats; architects, Messrs. T. D. Barry and Son. *Toller Whelme*, Dorsetshire; of local stone, with Ham Hill stone dressings; erected at the sole cost of Mr. W. Pope, who was his own architect; consists of nave and chancel, with square battlemented tower, and has several painted glass windows. Forth End, *Great Waltham*, Essex; of red brick, arches, &c., of moulded brick, with plate tracery of early character; tower, at junction of nave and chancel, surmounted by a tiled spire, 70 feet high; chancel terminates in an octagonal apse, and has fittings of walnut wood, with a good deal of carving; 285 seats, cost, with parsonage house, 4,000*l.*; architect, Mr. Chancellor, of Chelmsford. *Charlton Kings*, near Cheltenham; 900 seats; erected by Mr. C. Higgs, at an expense of over 7,000*l.*; architect, Mr. J. Middleton; chiefly noticeable for the free use of colour and ritualistic decoration in the interior; the exterior is incomplete. St. Barnabas, *Franche*, Kidderminster, of red brick and stone; tracery and mouldings of early character; has nave, chancel, and porch, with bell turret and light spire; architects, Messrs. Chamberlain and Martin, of Birmingham. *Lilley*, Hertfordshire, on site of the old church; of flint, with Bath stone dressings; details early in character; in general appearance the building is a solid, unassuming village church; architect, Mr. T. Jeckyll. Christ Church, *Llandrinod;* of local stone, with freestone dressings and an open timber roof; nave with aisles, chancel with sacristy and organ chamber, and tower at south-west angle, which is to be carried higher and surmounted with a spire at a future day; tracery and carvings of early character; interior, and especially the chancel, as in many recent Welsh churches, rather richly decorated, chairs in the nave and carved stalls in the chancel; architect, Mr. T. Nicholson of Hereford. Selly Hill, *Northfield;* of local stone with Bath stone dressings, interior faced with pressed bricks; open timber roof, 45 feet high at the apex, carried on trusses, no aisles; nave lighted by a large west window, and nine others, rendering the interior unusually light; very little

ornament of any kind; 300 seats, cost nearly 4,000*l.*; architects, Messrs. Chamberlain and Martin.

We must now turn for a moment to a less grateful theme—that of church restoration. Everywhere church restoration is in progress. An untouched old church is already a rare thing; soon such a church will be an object that architects and artists will think worthy of a long journey to examine. We have seen of late many of the newly-restored cathedrals and churches, and some that have numbered a few years since the destructive process was carried out, and it is curious how all alike have lost the old air of sober dignity and hoary venerableness. It is too late, however, for complaint. The change has been effected, and it is irreparable.

With our metropolitan cathedral the restorative process is only commencing. Last year, in referring to the proposed restoration of St. Paul's, and to the general scheme of decoration which was then foreshadowed, we asked on behalf of that large section of the public who regard the church as one of the most distinctive monuments in London, for "an explicit declaration that the decorations shall be in harmony with Wren's designs, and, in fact, be merely the completion of them in his own spirit." Such a declaration has since been made, and it has been authoritatively announced that it is the earnest desire of the committee to complete and not to alter Wren's design. This is plain and ought to be satisfactory, and it may appear ungracious not to accept it as sufficient. But the scheme of decoration, as we understand it, assuredly goes very far beyond what is known of Wren's plan, or desire, for the internal decoration of St. Paul's.

Unless the intentions of the Committee are misconceived it is proposed to apply coloured granite, marbles, mosaics, pictorial representations, gilding, and other polychromatic decoration more or less elaborately to almost the entire surface—if the quarter of a million asked for can be obtained. Now if this were done, or even a moiety of it, we feel certain that the architectural character and proportions of the building, its grandeur, solemnity, and simplicity, would be frittered away, and its very nature and individuality be modified if not essentially changed. Assuredly this would be so if the grand scheme of pictorial decoration, on which so much stress is laid, be adopted; for that is in its essence mediæval and antagonistic to the idea of a Protestant Cathedral as Wren conceived it. The scheme may be right according to the views of ecclesiologists, but it is out of harmony with the character of St. Paul's; it would not satisfy the historical sense of truth and fitness, and still less artistic judgment. Possibly the scheme may be misunderstood. It has never been fully and authoritatively laid before the public. If the Committee are satisfied of its excellence—as they surely must be before determining to spend so large a sum of money upon it, the time has come when they should publish it in ample detail. If it be worthy of adoption it will commend itself to the public mind and silence objectors. If not, there will be opportunity to

amend it, or propose a better. Whilst only vague and contradictory notions are afloat respecting it, the funds for effecting the restoration or completion will continue to come in slowly. A full, clear, and precise statement of what is intended might rekindle the flagging enthusiasm. Meantime why might not the Committee carry out Mr. Street's excellent suggestion to "first of all restore it to the state in which it was left by its architect, by clearing it of dirt and whitewash"? We should then be in a better position to judge what decoration was wanting: possibly its appearance thus might rather abate the craze after polychromy, and show that a moiety of the quarter of a million might be better applied than in the transformation of the interior of St. Paul's Cathedral.

The restored Chapter House of Westminster Abbey will shortly be opened to view. The works have been carried out most conscientiously: more we leave to be said when the building is cleared of workmen and their apparatus.

At Salisbury Cathedral, the restorative proceedings are now chiefly occupied with the choir and Lady chapel, where, the constructional work having been completed, or nearly so, the roof is being delicately coloured by Messrs. Clayton and Bell, under Mr. Scott's supervision. At Exeter Cathedral extensive works are in progress under the direction of Mr. Scott, by whose advice the Chapter have decided not to remove the organ screen as was proposed. The cost of the restoration is estimated at 15,000*l.*, towards which the Chapter have subscribed 10,000*l.*; the rest has been added by the county. At Worcester Cathedral the work of restoration is proceeding apace, under the direction of Mr. Perkins. The choir has been entirely renovated. The choir of Gloucester Cathedral has undergone a still more complete restoration and decoration under the direction of Mr. G. G. Scott, R.A. It has been three years on hand and about 13,000*l.* has been expended upon it. The entire restoration of the cathedral will cost 45,000*l.* A good deal has been done at Wells, but the extent to which restoration has involved the destruction or rechiselling of the famous statuary on the west front is much disputed—and we have not seen the building since it has been in the restorer's hands. At Bristol, Mr. Street goes on steadily with his work, which is something more, it will be remembered, than what is generally understood by the term restoration, inasmuch as a new nave and aisles (117 feet long and 80 wide) and two western towers, each 130 feet high, have to be added to the old fabric. As far as they have gone, the works we are assured are entirely satisfactory. About 20,000*l.* has been spent on them, and at least as much more will be required. At St. David's the choir restorations having been completed, the nave and aisles have been taken in hand, Mr. Scott being the architect under whose direction the restoration is being effected. At Rochester, Mr. Scott has begun with restoring the nave and clerestory, having first satisfied himself as to the general safety of the edifice.

The restoration of the nave and transepts of Bath Abbey

Church, commenced in 1865, under the direction of Mr. G. G. Scott, R.A., has at length been completed. Much of the work has been constructive as well as restorative; but it has been carried out in a conservative spirit. The groining has been laid open and restored throughout; many of the windows have been renewed; galleries have been removed, and the nave has been adapted for public worship. Another old abbey church, St. Alban's, long sadly neglected, yet in many respects the most interesting remaining, this year gave warning of imminent danger. Happily, though the sum required to ensure its safety was beyond the means of the townsmen, the county magnates recognised the urgency, and a sufficient amount was guaranteed to enable Mr. Scott to perform such work as was necessary to preserve the building. But he stated that it would cost 46,000*l.* to put the church into the condition in which it ought to be, and an appeal has been made for assistance to the country at large, which is being liberally responded to. Every one interested in our national antiquities will sympathize with the desire for the preservation, future security, and adequate restoration of St. Alban's Abbey Church, but we cannot but feel that there is danger from the ambition of the restorers. On such a work the hand of the restorer should be laid reverently. Every touch of the ancient workmen should be carefully preserved, and no new work should be added that is not positively necessary. Above all, modern mock mediæval ornamentation should be regarded as desecration. It is proposed to adapt the nave for congregational service. Whatever is requisite for that should be done: nothing more.

The several sections of Dissenters have been active in building, but we do not find among them as yet any very near approach to an ideal excellence in church or chapel. Some still sternly refuse to adopt the Gothic fashion, but they instead merely adhere to an earlier habit. In all it is imitative work. Only in the adaptation of the interiors of their places of worship to congregational purposes they somewhat excel. The primary requisites with them are always that the preacher shall be seen and heard, that the listeners shall listen in comfort. The following may be taken as examples of the Congregational churches and chapels completed during the past year. Near London, Stamford Hill Chapel is an example of the orthodox form in favour with well-to-do congregations. It is a cruciform church, has nave, aisles, and an apsidal chancel, and a lofty tower and spire; is Second Pointed in style; constructed of Kentish rag and Bath stone, and will, with the galleries, accommodate about 1,400 persons. Vestries, a lecture hall, and kitchen, and chapel-keeper's rooms are attached, and the whole has cost £13,000; architects, Messrs. Tarring and Sons. The same architects, have built a similar and scarcely less costly Gothic chapel at Walthamstow, for a congregation of 800. In this a steeple 150 feet high is the most conspicuous feature of the exterior. A First Pointed chapel of stock brick with bands of red and blue brick and Bath stone dressings, erected by

Mr. Tabberer, at New Hampton, may serve as a sample of the humbler but more numerous class.

Of country chapels we may note—St. Peter's Hill, *Grantham;* First Pointed in style; of Ancaster stone, lined with brick; comprising nave and aisles divided by cast-iron columns with stone bases and capitals, an organ bay on the north, vestries, and a turret 70 feet high at the south-west angle. It has 600 sittings, and with a minister's house, cost something over 4,000*l.* The architect was Mr. J. Tait, of Leicester; who has also built a neat but inexpensive First Pointed chapel at *Aylestone*, near Leicester, and one or two elsewhere. North-street chapel, *Brighton*, is a more elaborate early Second Pointed building, designed by Mr. J. Wimble, displaying symbolic carvings, poilshed granite shafts, painted glass windows and various other decorative features. Other chapels have been erected at Stapleton Road, *Bristol*, Italian in style, with 1,000 seats, designed by Mr. H. F. Price, of Weston-super-Mare. Halifax-road, *Dewsbury*, classical in style: 1,000 sittings, cost 8,000*l.*, architects Messrs. Kirk. At *Southsea*; late First Pointed; cruciform; 670 seats, architect Mr. Stent, of Warminster, &c.

Among the Wesleyan Methodists the desire for increased vigour in chapel building, found emphatic expression at the recent Conference at Manchester, and it was announced that Sir Frances Lycett had arranged to give 50,000*l.* for the erection of new chapels in London, provided an equal amount could be provided in the provinces, and of this it was added 26,000*l.* had already been raised. "Four chapels were then erecting in London, and it was hoped before the end of the year that the first ten chapels which they proposed would really be commenced." Opinion in the Conference was unfavourable to Gothic "because it was generally difficult for a preacher to be well heard in a Gothic structure; but the conclusion arrived at was that "the people who built the chapels, and who would have to worship in them, should be left to choose the style of architecture."

Most actual progress has however been made in the country. At *Doncaster* a chapel in the Italian style, capable of accommodating 1,000 persons, has been erected from the designs of Mr. Watson of Wakefield, at a cost of 7,800*l.* At *Wakefield*, one by the same architect, but Gothic in style, of red brick with stone dressings, for 400 adults and 200 children. At *Cambridge*, one of very orthodox Gothic, designed by Messrs. Hill and Swann of Sheffield, for 700 persons, at a cost of 4,000*l.* At *Bowling*, near Bradford, Yorkshire, Italian in style, designed by Messrs. Andrews and Pepper, for a congregation of 500; cost 4,000*l.* At *Middleton-in-Teesdale;* Italian; architect Mr. Ranger of Lewes. At *Throckley*, near Newcastle-upon-Tyne; First Pointed in style; 245 seats, cost about 1,000*l.*, defrayed by Mr. Stephenson of Throckley. At *Hipperholme*, North Riding of Yorkshire; architects, Messrs. Ives, cost 2,200*l.* At *New Brighton*, Liverpool, from the designs of Mr. H. H. Vale of Liverpool. At *Launceston;* First Pointed with a good deal of internal decora-

tion; 700 sittings; architects Messrs. Hine and Norton of Plymouth. At *Grimsbury*, near Banbury, classic in style, designed by Mr. Hackett of Banbury; and others at *Wike*, at *Akroydon*, Halifax, and elsewhere. The Primitive and other sections of the Methodist body have also built several chapels, but none that call for special notice.

The most important chapel erected by the Baptists in London or its vicinity is one at Stoke Newington to accommodate the congregation of Devonshire-square chapel, Bishopsgate. The building is First Pointed in style, and comprises nave, aisles, chancel, and galleries, with a tower and spire 125 feet high. It was designed by Mr. T. C. Clark, and has cost 7,500*l.* A New Tabernacle is making rapid progress in Burdett-road, Stepney, a sort of fosterchild of Mr. Spurgeon's Tabernacle, which may possess some interest for those concerned in congregational architecture, since it is to be constructed wholly with a view to congregational purposes and to afford accommodation for at least 4,000 persons: but as far as it has proceeded the exterior makes no pretence to architectural effect. Among the country chapels the following may be mentioned: Glossop Road, *Sheffield*; Second Pointed in style, with considerable interior decoration, including a painted glass window over the baptistery; 820 seats, cost 6,500*l.*: architects, Messrs. Innocent and Brown of Sheffield. Carey Chapel, *Reading*; erected from the designs of Messrs. Searle and Son, at a cost of 3,000*l.* Fabius Chapel, *Everton*, Liverpool; of red and white brick; Italian in style; architect, Mr. W. Penney of Liverpool; 550 seats, cost 2,200*l.* Mint-lane, *Lincoln*; Gothic; 580 seats; architects, Messrs. Drury and Mortimer of Lincoln. Other chapels have been built at *Droitwich* and elsewhere, but these examples will suffice.

Several Presbyterian chapels have been erected. The following will serve to show their character, and that the old antipathy to "steeple-houses" has completely subsided. *Ipswich*, of Kentish rag with Bath-stone dressings; Second Pointed; cruciform, with an apsidal termination, and a square tower and stone spire 125 feet high; 500 sittings, cost about 3,000*l.*; architect, Mr. F. Barnes. Whitefield Memorial Church, *Gloucester*; Second Pointed; of white brick, with red bricks in bands and patterns, and over the principal entrance a representation in low relief of Whitefield preaching; tower and spire 140 feet high; architects, Messrs. Medland of Gloucester.

It is worth recording here that a church, St. Nicolai, has been erected for the use of the Danish, Norwegian, and other Scandinavian residents in Hull and the seamen visiting the port. It is Continental Gothic and has the proper national symbols, but it would have been desirable to impress its nationality more distinctly upon it. The architect was Mr. Botterill of Hull. But though this is the first Danish Lutheran Church consecrated in England, the first stone of another to be called the Scandinavian Seamen's Church, Surrey Commercial Docks, was laid by Prince Oscar, during his visit here last summer.

The Roman Catholics have not been the least busy in church building, but with them it is so much the custom to proceed by stages that it is not easy to mark the period of completion. In *London* we have noted only two new churches, both Gothic, and of a somewhat sombre type—a large church at *Bow*, designed by Mr. Blount ; and the Oratory of the Convent of the Assumption, Kensington Square, designed by Mr. G. Goldie, as the first section of a much larger church. In the country churches have been consecrated among other places at *Stranbrook*, near Worcester ; designed by Mr. E. W. Pugin, as the first instalment of a large Benedictine Abbey. At *Oldcoats ;* Second Pointed ; of local stone, designed by Mr. S. J. Nicholls. At *Newton Abbot.* a First Pointed building designed by Mr. J. W. Rowell ; at Darlington and elsewhere.

A Jewish Synagogue has been erected at *Bristol*, from the designs of Mr. Collins, with some attention to architectural character ; and another at *Newport*, South Wales : but our limits forbid us to dwell longer on this section.

4. Buildings for Public Purposes.

Liverpool Exchange, of which we gave an engraving and description in the 'Companion' for 1870 (pp. 164–7), has been completed, and the Board of Directors passed a resolution congratulating the architect, Mr. T. H. Wyatt on the creditable and satisfactory manner in which the problem of reconciling the requirements of commercial offices with the importance of a large public building has been solved. The praise was well deserved. The building is a noble one, and creditable not only to the architect but to the public spirit of the Liverpool merchants who enabled him to carry out so large and costly a work to a satisfactory termination. Rochdale Town Hall, described and engraved in the 'Companion' for 1868, pp. 168–9, has also been formally opened. The building, a large and richly decorated Gothic one, designed by Mr. W. H. Crossland, is greatly admired ; and, standing in a fine open space of about 20 acres, it forms a conspicuous ornament to the town. The cost of the building and ground is said to have been about 100,000*l.*—which speaks well for the liberality as well as the prosperity of Rochdale. The magnificent new Town Hall, Manchester, advances steadily, but the progress of such a work must of necessity be slow. The Manchester Royal Exchange has also made considerable progress. The Exchange proper promises to be a splendid saloon. Bradford Town Hall has likewise made good progress.

A new Town-hall has been opened at Wareham. It is a Gothic building of red brick and stone, the lower part being appropriated to a Corn-exchange the upper to the Town-hall and magistrates' rooms. The architect was Mr. Crickmay, of Weymouth. A Town-hall and market-house has been completed at Abergavenny from the designs of Messrs. Wilson and Wilcox. The building is large and Gothic in style, and constructed, the

Town-hall of local stone, the market of brick; and it is at once ornamental in appearance and convenient in its arrangements. The new Market-hall at Newton, Montgomeryshire, a brick and stone building, Lombardic in style, designed by Mr. D. Walker, is described as the largest for market purposes in the principality. At Elsecar, Yorkshire, Earl Fitzwilliam has built, at his sole expense, a spacious covered market-hall; and others are being built at Howden and elsewhere. Cattle markets have been completed at Chichester, from the designs of Mr. Hawksley; at Melton Mowbray, designed by Mr. R. W. Johnson, and in one or two other places. A new corn exchange has been commenced at Rochester, and several others have been begun or projected.

Having in recent volumes described at length the new St. Thomas's Hospital, on the southern embankment of the Thames, it only remains to record its formal opening by the Queen. Of the building itself, the ability displayed in its construction and arrangement, and its architectural shortcomings, we have nothing further to say. As a great metropolitan hospital we trust it will be completely successful. If it should in any way fail it will furnish additional evidence that the collection of such large numbers of sick persons together is a sanitary mistake. Nothing has at any rate been knowingly neglected, and no expense has been spared to make St. Thomas's Hospital as nearly as possible perfect. The cost has necessarily been very large, in all not less than 500,000*l.*, but of this a sum of 100,000*l.* was paid to the Metropolitan Board of Works for the site, which it may be recollected was reclaimed from the Thames by the embankment.

A large fever hospital is in course of completion in the Leeds Road, Bradford, a Gothic building of picturesque outline designed by Messrs. Andrews and Pepper. The Horton Memorial Hospital, Banbury, is a large and handsome building, Domestic Gothic in style, of red and black bricks with Bath-stone dressings, designed by Mr. C. H. Driver, and comprises a central administrative block with a lofty tower, and two wings for the patients. The Alsop Memorial Hospital, Leek, is a neat red brick and stone building, designed by Mr. Sugden, with careful regard to improved medical and sanitary requirements. At Macclesfield, a very large hospital or infirmary has been erected from the designs of Mr. J. Stevens, but left unoccupied and unfitted owing, we believe, to failure of funds, although a bequest of 30,000*l.* will be forfeited if it be not handed over to the trustees ready for service and free from debt by 1875. Macclesfield will, however, hardly allow that to happen.

At Brooklands, Huddersfield, a spacious and stately building, designed by Mr. E. Birchall, of Leeds, has been erected, provided with an endowment of 25,000*l.*, and presented as a Convalescent Home for Huddersfied District, by Mr. Charles Brook, of Meltham Mills. The building, which is a pleasing Domestic Gothic edifice with a frontage 190 feet long, stands on Meal Hill, at the head of a cheerful valley which the Messrs. Brook have converted

into a recreation ground for the Meltham workpeople. The sanitary arrangements of the new hospital have been carefully considered, all the best recent appliances furnished, and pleasure ground of eleven acres are attached. Room is provided for the patients in the church at Meltham Mills, which was also built by the Messrs. Brook.

Other convalescent hospitals have been begun, improved, or completed, and we are glad to see that their value is becoming more generally recognised. We also rejoice to observe that cottage hospitals are on the increase. Buildings have been erected, or houses adapted for the purpose, in Surrey and Lancaster, Cornwall and Durham, and a great many intermediate places and everywhere favourable reports are returned of their working.

A large range of buildings has been opened in the vicinity of Macclesfield as a lunatic asylum. At present the asylum, which has cost 120,000*l*., makes provision for 250 inmates, but it will eventually receive 700. The buildings cover an area of 9½ acres, are in four blocks connected by covered ways, are built of red brick and stone, Italian in style, are well fitted throughout, and stand in the midst of 80 acres of garden grounds.

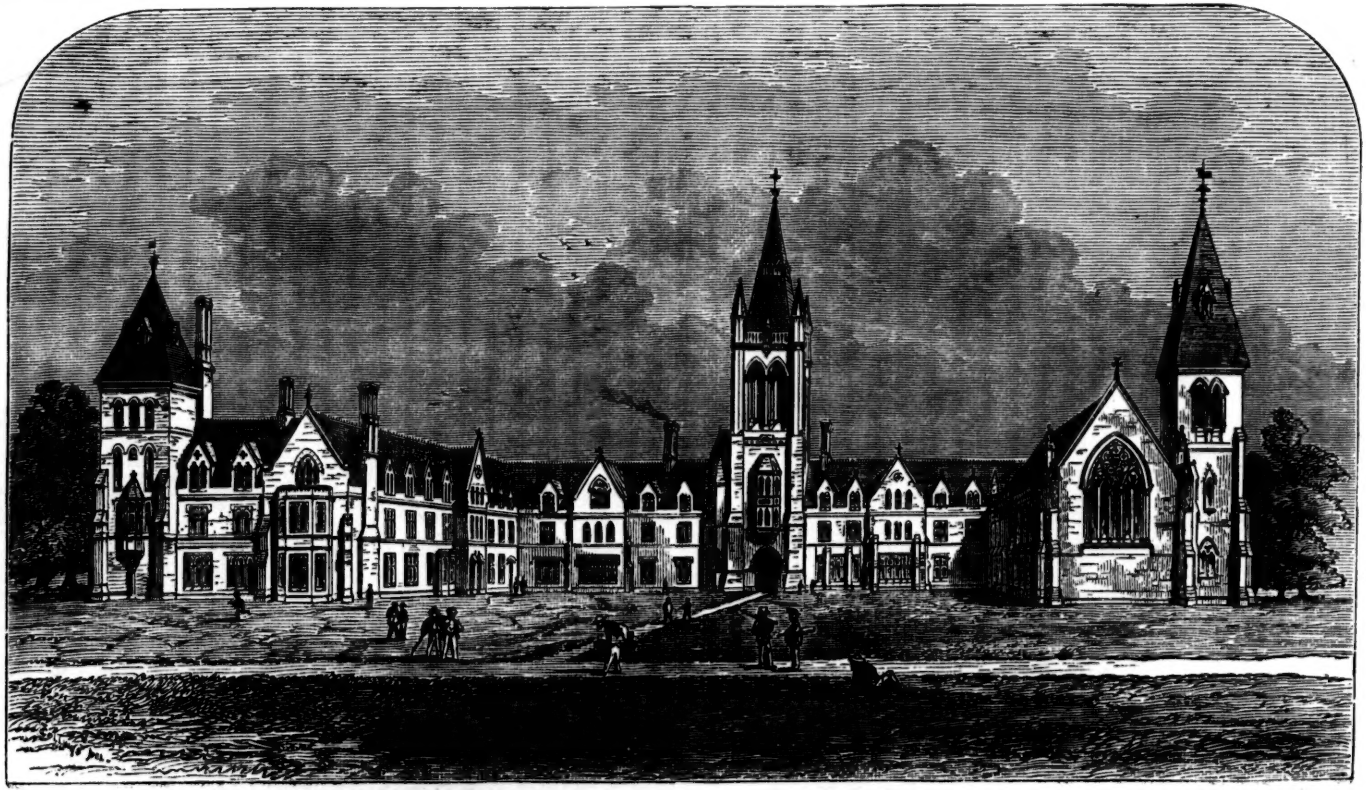
That excellent institution, the London Orphan Asylum, finding its old neighbourhood, Clapton, becoming too crowded and surrounded with factories, has removed to the more open country and purer air of Watford—a locality that has become a favourite spot for asylums and benevolent institutions. The new Orphan Asylum consists of a series of nine houses (of course in the fashionable brick Gothic) each for fifty children, grouped about the administrative block, in which is the great hall 108 feet by 50, and which has a clock tower 125 feet high, and the chapel a very pretty one, built at the sole cost of a lady who was brought up in the asylum, and afterwards served it as head-mistress. Mr. H. Dawson was the architect. A very neat range of buildings has just been completed near the Alexandra Orphanage, Hornsey Rise, for the Aged Pilgrim's Friend Society. All unnecessary ornament has been avoided, the building is a comparatively inexpensive one, yet on the whole it seems to us that the architect, Mr. Boreham, has succeeded in making it one of the most comfortable, cheerful-looking, and convenient homes for aged and infirm pensioners we have seen for some time.

Extensive and well-arranged baths have been erected at Southport, from the designs of Messrs. Horton and Bridgford, at a cost of about 23,000*l*. Public baths have been constructed at Harrogate by the Improvement Commissioners at a cost of 20,000*l*.; at Brighton, and in one or two other places, but their number increases far too slowly. An excellent example has just been set to other institutions by Rossall School which has erected baths on a large scale, the swimming bath being over 122 feet long, 30 feet wide, and deepening from 4 feet at one end to 6 feet 6 inches at the other and is of course available for swimming throughout the year.

5.—Buildings connected with Education, Art, &c.

The buildings for the Charter-house School in course of erection near Godalming, Surrey, are assuming sufficient distinctness to allow a tolerably correct judgment to be formed of them. Through the courtesy of the architect, Mr. P. C. Hardwick, F.S.A., who kindly lent us drawings, we are enabled to give an accurate representation of the principal quadrangle, as it will appear when finished, the design having been considerably modified since it was originally published in the professional journals, 1869–70. As will be seen the style is that of the best period of Collegiate Gothic, and the chief points of interest are the hall, central gate-tower, and the chapel, which forms the right wing of the quadrangle, and is flanked by a massive tower. The chief modification of the design has been in the way of simplicity and symmetry, and as it seems to us with manifest advantage to the general effect. The single great window in the gable of the chapel is a decided improvement on the two smaller windows originally proposed. So is the admission of the large central gable to the left of the gate-tower. The buildings are constructed of the local green sandstone, with dressings of Bath stone. The central portion of the building is appropriated to the foundation scholars, who will each have a separate sleeping-room or cubiculum. Adjoining are the studies; near at hand a suite of rooms for boys on the temporary sick-list, and great care has been taken with the sanitary arrangements, as well as with the school matters. Provision is made for sixty foundation scholars, and for 100 boys in the houses of the head master and the second master. The chapel will ultimately accommodate 600 scholars, besides the masters and their families and visitors, but at first only 300 boys will find seats. Generally provision is made in the plan for the future extension of the school, the erection of additional masters' houses, an isolated infirmary, the completion of the chapel, &c. The buildings are so arranged that in bad weather the boys, at whatever part of the building they reside, may pass to the school-rooms, hall, or chapel, without going into the rain. The grounds purchased by the trustees are over 70 acres in extent, and of this eight acres have been converted into an excellent cricket ground. The non-academic portion of the Charter-house, or Sutton's Hospital proper, will remain, at least for the present, undisturbed in the well-known old buildings; but the old school buildings have been purchased by the Merchant Taylors' Company, whose school will be removed there as soon as the Charter-house boys migrate to Godalming.

Another once famous Grammar School has removed to a new abode, and is starting, as is hoped, on a new career of prosperity. The new Reading School just opened outside the old town is a spacious, well-arranged, and picturesque Gothic building, designed by Mr. A. Waterhouse, and completed at a cost of about 25,000*l*. A new Grammar School is approaching completion at Maidstone, under the direction of Mr. E. W. Stephens. It is a



Charter-house School, near Godalming, Surrey.

BRITISH
24JA72
MUSEUM

Collegiate Gothic building, with provision for foundation scholars, boarders, and day scholars; and has a great school-room for 180 boys, besides class rooms, master's house, &c. By the liberality of the Duke of Devonshire, a spacious semi-Gothic building has been erected from the designs of Mr. H. Currey, for Eastbourne College, Sussex. A middle class day-school for 300 boys, in connection with the Whitgift Hospital, Croydon, has been erected from the designs of Mr. A. Blomfield, at a cost of about £15,000; it is of course a Gothic building; its principal external feature is a tall central entrance-tower of very good design.

Under the directions of the new School Boards there is about to commence a period of unwonted activity in the building of Primary Schools. Our business is to record what has been accomplished or is in progress, and therefore we make no further reference to this auspicious movement. But we take the opportunity to call the earnest attention of the members of School Boards, school architects, and all interested in the construction of new primary schools to a series of practical suggestions made in the Companion to the Almanac for 1863 (pp. 263–66), on the working arrangements in such buildings. They embody the results of the experience of one of the ablest, most observant, and most thoughtful schoolmasters of our time, and if carried out would add immensely to the usefulness of the schools and the comfort of both teachers and scholars.

Of class institutions the most important of the year is the Indian Civil Engineers' College, Cooper's Hill. On the spot immortalized by Denham was a fine mansion and grounds which the Government purchased for the purpose of carrying out their educational experiment. The house was a large and nearly new one (designed by Messrs. Francis) but not nearly large enough for the College, and it was remodelled and greatly added to by their architect, Sir Digby Wyatt, and is now a convenient collegiate building, with provision for the residence and instruction of 150 students, president, professors, and staff of officials. A block of buildings affording accommodation for thirty students, with library, class rooms, &c., has been formally opened at the Countess of Huntingdon's Theological College, Cheshunt. The new building, 121 feet long, 26 feet deep, and three storeys high, is of brick, with Bath-stone arches, mouldings, and dressings, Collegiate Gothic in style, very freely treated, and has at the western extremity, a square entrance tower, with a tall pyramidal roof, 100 feet high. The architects were Messrs. Lander and Bedells.

At the Universities, building has hardly been carried on with such vigour as in some previous years. Cambridge has been by far the most active. St. John's has added some statues to its chapel and completed the new buildings. At Christ's College several new rooms have been built. The chapel of Corpus Christi College has been enlarged and transformed in accordance with current ecclesiological ideas. The most important event of the year has however been the completion of the

works at Caius, the aspect of which has been entirely changed. Mr. Waterhouse, was the architect, and he is generally allowed to have produced a noble building, though the style, in order to harmonize with the other buildings, is English Renaissance, and consequently very different in character to that in which he has been accustomed to work. The same architect has added a wing to Jesus College, of red brick, like the other buildings. He has also undertaken extensive additions to Pembroke College. Trinity College, having restored its chapel, is about to expend several thousand pounds in decorating its magnificent library; and extensive works are spoken of as about to be commenced by other Colleges, King's being of the number.

A new Library and Lecture Theatre, the latter for 300 persons, has been opened in connection with the Halifax Literary and Philosophical Institute. A neat red brick and stone building has been opened as a Free Library, at Wallingford, Berkshire; the reading room will accommodate 300 persons. At that remarkable new Yorkshire town, Saltaire, a large and handsome new building, Italian in style, with statuary and carving on the front, and large and elegant rooms inside, has been erected for the Saltaire Club and Institute, at a cost of 23,000*l*. It forms one side of a square, opposite the schools, with which it harmonizes in style. The architects were Messrs. Lockwood and Mawson, who have designed the whole of the buildings in Saltaire.

During the last two or three years there has been something like a mania for new theatres in London, but most of those lately opened have been modifications of existing buildings, like the Court Theatre, Sloane Square, and the Circus, Argyll Street, Oxford Street; or have no claim on the ground of architectural character to a place among public improvements. Some of a more ambitious kind are however contemplated, and one, the Criterion, Piccadilly, a kind of combination of theatre, music hall, and restaurant, on an imposing scale, has, we believe been commenced. In the country the most important new theatre is the Queen's at Manchester, designed by Mr. E. Salomons, who had already proved his capacity in this line at Liverpool. The auditorium differs somewhat from the customary horse-shoe, and is pronounced superior. It is of considerable size, the pit seating 1,300 persons, the gallery 800, and the boxes a proportionate number. The proscenium is 30 feet square, the stage 42 feet deep; the general appearance is described as pleasing, the seeing and hearing qualities as excellent. At Reading a building has been erected called the Theatre Royal and Albert Hall, which is to serve the double purpose of a theatre and concert room: it will accommodate 1,000 persons.

6. Street Architecture.

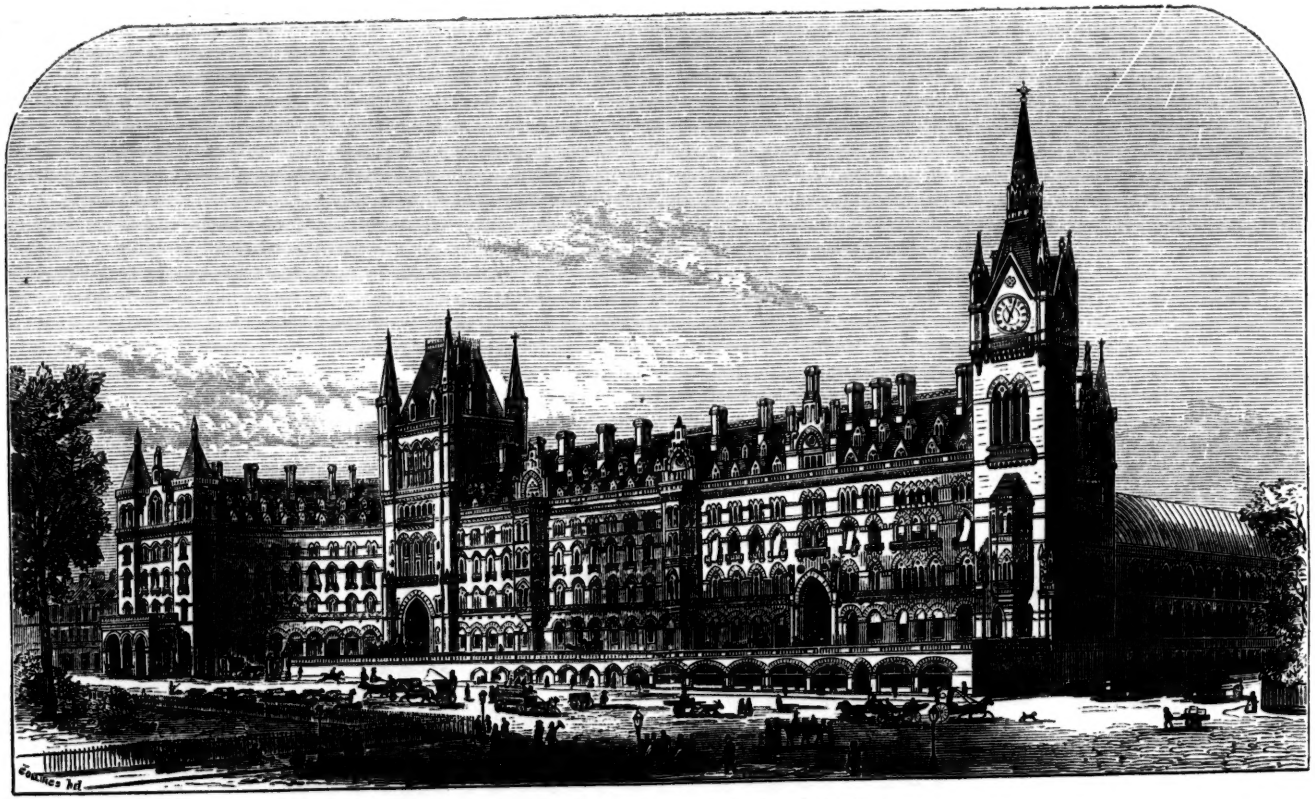
Lacking a Haussmann, the broad new streets we carry through the heart of the old metropolis instead of serving to impart

an aspect of new life, vigour, and beauty to it, add for years new furrows and leave deep traces of waste and desolation. For long years Victoria Street, Westminster, and Victoria Street, Holborn, model streets as they were pronounced, and useful as great arteries for traffic, presented scenes of dreary ruin that no one could expect to witness in a city like London. Little has even yet been done to fill up the vacant places, and nothing systematically. Now, however, it is proposed to complete Victoria Street, Westminster, by the erection of ranges of Gothic mansions, designed by Mr. E. W. Pugin, to be let out as chambers; and Victoria Street, Holborn, under its altered designation, as Farringdon Road is having one and another scattered warehouse built along it, and in connection with the Holborn Viaduct, may even grow into importance. As yet, however, Holborn Viaduct with its approaches and connected streets has only added to the waste places of the city. The newest Queen Victoria Street, the eastward continuation of the Thames Embankment, has not, so far, fared better than its predecessors, although, unlike them, it lies in the very centre of City traffic. The Mansion House Buildings at the junction of the new street with the Poultry, are in fact the only block of buildings erected along it, except the Bible Society's House and the Probate Office at the Blackfriars end. Mansion House Buildings, designed by Messrs. Belcher, form a very pretentious structure, Gothic of peculiar but elaborate and highly decorated character. The ground floor is a range of six shops, the only break being an ornate entrance to the chambers in Queen Victoria Street. Above the shops are four storeys with some 24 windows in each, except the attic which has dormers wider apart. The acute angle at the junction of the streets is rounded off, and this circular end is prolonged upwards into a tower which is crowned with a tall spire. Altogether, though somewhat florid in itself and entirely out of keeping with the surrounding buildings, the structure has a striking effect and the sky-line tells well in approaching it from the east. But in it the old difficulty of the London street architect is certainly not solved. The shops have the thinnest of shafts between them, the huge sheets of plate glass are held by the slightest framework, every inch of window-space having to be husbanded for the display of goods, and consequently you have an enormous mass of masonry in the upper storeys supported on what appears to be the flimsiest and most fragile base. The offices of the Union Bank, Holborn Circus, and the large draper's shop on the opposite side of the way—the former somewhat severely classic the latter florid Renaissance—are the two most important buildings erected on the main line of the Holborn Viaduct; on the sideways little more has been done. About Farringdon Street two or three houses have been built with some attention to architectural character, and an unusually ornamental tavern, the King Lud, in the new circus, Ludgate Street.

Around the Bank and Royal Exchange some new offices have

been erected, and offices and warehouses in other parts of the City. The Imperial Ottoman Bank, Throgmorton Street, Mr. W. Burnet, architect, is a small but rich and solid building, in which on a classic basis the oriental character has been distinctively impressed. A house in Cornhill, the India agency department of the business of Messrs. Smith & Elder, now Messrs. Kings', like the bank just noticed of comparatively narrow frontage, is also noteworthy as exhibiting some distinctive character. Great apparent solidity is here secured by having the piers of the ground floor of considerable width, and with the architrave of tooled granite. Above this are five storeys, all of which, except the attic, are faced with terra-cotta: here, again, the decoration assuming a markedly oriental character. Without being entirely satisfactory, the façade is effective and suggestive, and should it resist the attacks of the City atmosphere, will establish the value of terra-cotta as a decorative material in street architecture.

Other houses, shops, and offices, we may leave, in order to notice briefly the very remarkable addition made to London architecture by the St. Pancras Station of the Midland Railway. In previous years we have spoken of the railway terminus proper with its unrivalled roof, extensive platforms and labyrinth of columns, vaults, and underground compartments, and taken note of the progress of the great hotel which forms the street front of the station. The character of this immense structure will be best understood by the engraving, in which the courtesy of the architect, Mr. G. G. Scott, R.A., in supplying the necessary materials, has enabled us to render correctly those parts of the building which are as yet unfinished. The building is of a deep red brick and stone; the style, as will be seen, First Pointed, of domestic character, and with French affinities. How far this style will be found adapted to modern wants and purposes will here be fairly tested. If it answers for a London railway station and hotel, its capability for almost any purpose, may be assumed. From its vast size the building cannot fail to be imposing. But apart from that its effect is very fine. The appropriateness of parts may be questioned, but the general excellence is beyond dispute. At present the western end, the advanced portion shown on the left of the engraving, is incomplete, and the interior is, so to speak, untouched; the unbuilt western portion being that which will contain the state apartments of the hotel, including a splendid public room 100 feet long, 26 feet wide, and 26 feet high. In splendour, the principal rooms will rival the exterior, and altogether there can be little doubt it will be the most magnificent structure of the kind in the country. From the engraving a tolerable notion will be obtained of the vast size of the structure, but a few figures will make this clearer. The entire length of the front will be 565 feet, of which about 170 remain to be built; the height of the parapet (without the roof) is 80 feet; the clock tower, on the right of the engraving, is 270 feet high, the central tower will be over 200 feet; the depth of the building to the railway platform is 66 feet. The space covered



St. Pancras Station and Hotel, Midland Railway.

BRITISH
24 JA 72
MUSEUM

by it will be about 2,500 square yards. The terminus proper, behind the hotel, is on a scale of proportionate magnitude; the roof, which is slightly pointed to harmonize with the Gothic front, being 700 feet long and 240 feet in span, the rafters rising 100 feet from the platform, and the vast space being unbroken by ties or braces. The floor of the station is borne on plate girders which are supported on 690 cast iron pillars; the area beneath the station floor, comprising stores for pale ale and other heavy goods, as well as the lines connecting the Midland with the Metropolitan Railway. The engineer was Mr. W. H. Barlow, C.E., but the details of the roof were entrusted to Mr. Ordish. The area required for the new terminus of the Great Eastern Railway, stretching from Broad Street eastward to Sun Street, is now cleared, and in magnitude this station appears likely to rival any yet constructed in London.

We have barely space left to mention, certainly not to describe, the various street improvements made and making in our larger country towns. Conspicuous in this direction is Bristol, with the fine new approach to the city from the Great Western station, happily displacing the mean streets through which the traveller had previously to pass; many handsome storehouses, offices, and shops, have also been erected in the old city. Manchester has been widening some of its narrow streets, and erecting a handsome new Reform Club-house at the top of King-street, as well as many new and good business houses, in addition to the important municipal works on hand. Liverpool is also busy architecturally as well as commercially. Among the Yorkshire towns Bradford is conspicuous for both private and public buildings, but report tells of good work in progress at Leeds, Halifax, Barnsley, and other towns.

As examples of what is being done in the provinces, we may point to one class of buildings—the banks. One of the most noteworthy for boldness and originality of treatment is Brooks's Bank, Manchester, erected from the designs of Mr. Truefitt, at a cost of about 26,000*l.*, and of which the most striking external feature is a portico carried out far enough to permit carriages to pass beneath it. At Hull a stately Italian edifice has been erected from the designs of Mr. Botterill for the Hull Banking Company. The National Provincial Banking Company have nearly completed a large and very ornate bank at Newcastle-upon-Tyne; and commenced others at Gateshead and Middlesborough. The buildings are classical Italian in style, and by the same architect, Mr. J. Gibson, already favourably known by the bank erected by him a few years back for the same company in Bishopsgate Within. At Burslem a spacious bank has been completed for the Manchester and Liverpool District Banking Company; it is of brick and stone, Gothic in style, and forms a detached block, the principal front facing the Market Place: the architects were Messrs. Barker and Ellis of Manchester. The appearance of the Market Place, Bishop's Auckland, has been improved by the erection of a Gothic bank (Messrs. Backhouse and Co.'s), which

has received warm local commendation; the architect was Mr. G. G. Hoskins of Darlington. At Ossett a bank, classical in style, has been built for the Wakefield and Barnsley Union Company; and others in several other places.

7. Bridges, Docks, etc.

The vast works which have been for several years in course of construction for the extension of Portsmouth and Chatham Docks are now hastening towards completion. At Portsmouth an area of 180 acres, land, water, and mudland included, has been taken in for the dockyard extension, and the works have been on a scale of great magnitude and presented important engineering problems. They include, besides wharfages and all necessary appliances, a tidal basin ten acres in area, with an inclosing wall 76 feet in width; a deep dock, 450 feet long and 100 feet wide; two locks, each 562 feet long and 100 feet wide; a repairing basin, 1,330 feet long, with a depth of 30 feet of water at high tides; and four or five other docks, 500 feet long and 110 wide, with entrances 80 feet wide. At Chatham the first of the three great basins for iron-clad steamships has been formally opened, and the others greatly advanced. The three basins occupy an area of 380 acres, being more than four times the area of the present dockyard, which is only about 90 acres. The Repairing Basin, now finished, has an area of 22 acres, and is connected with four dry docks, of which two are completed. It has an extreme length of 468 feet, is 80 feet wide at the entrance, and has a depth of from 30 to 32 feet at high tides. The works here will cost little short of two millions sterling.

At Bristol two large docks are in course of construction, one between the Avon and Cumberland Basin, and the other between the basin and the floating harbour. They are each 350 feet long and 62 feet wide, and are being constructed in the most solid manner under the direction of Mr. T. Howard, C.E. They have been long talked of, and are now forming to counteract, in some measure, the influence of the extensive new docks in course of construction at the mouth of the Avon under the direction of Mr. Brunlees, C.E. Among similar schemes which have been started, is one for new docks at Berwick-upon-Tweed, which, if carried out, may do much to revive and develope the commerce of the old town.

We may record here the completion of Portland Breakwater, by the deposition of the last stone, without parade or closing ceremony, on the 4th of March, 1871. Among municipal and private works of this class the extensive works undertaken by the Port and Haven Commissioners for the improvement of Great Yarmouth Harbour deserve honourable mention. Iron piers are erecting at Hunstanton, Redcar, and several other places; a company has even been formed for erecting one at Herne Bay, and has proceeded so far as to remove with no little labour the decayed old wooden pier.

Returning to London we may note that a useful iron pier has been erected at the Lambeth end of the Southern Embankment, for the use of Thames steamers and watermen's ferry boats. Higher up the river a beginning has been made with the long talked-of Albert Bridge from the Cadogan Pier, Chelsea, to Prince Albert Road on the opposite shore. It will be on "the rigid suspension principle" of Mr. R. M. Ordish, C.E., who is engineer to the company.

At Nottingham, the picturesque old bridge over the Trent has given place to a more convenient new one of stone and iron designed by the borough surveyor, Mr. M. O. Tarbotton, C.E. It is a structure of pleasing appearance; 700 feet long and 40 feet wide between the parapets, the three main arches being each of 100 feet span; it has cost the borough over 30,000*l*. The Severn, at Stourport, has been spanned by an iron bridge, from which a viaduct of brick and stone has been formed for a considerable distance on either side. In all the viaduct consists of 45 segmental arches; the centre arch which crosses the river having a clear span of 155 feet. It was erected from the designs and under the superintendence of Mr. E. Wilson, C.E. At Bathampton a stone bridge of eight Gothic arches, each of 30 feet span, has been constructed across the Avon by Mr. E. Hill, of Bath.

Even this imperfect summary of what has been accomplished during the past year will have sufficed to show that not only has there been no real decline in any important department of architecture or public improvement, but that signs of increased activity are everywhere apparent, and that there has been marked and satisfactory progress. Although the taste displayed in particular buildings may be questionable, and our architecture generally be based possibly on an erroneous artistic principle, it is beyond dispute that more attention is given to architectural effect than at any previous period, and that this extends to classes of buildings in which anything but utility was until lately quite ignored. In engineering works we see more sobriety of judgment, combined with a wider development and more constant application of scientific resources and constructive skill. The principles of sanitary science are becoming better understood and more widely practised. Town drainage is seen to be insufficient, unless considered in connection with the disposal of the sewage on the land, the freeing of rivers and watercourses from pollution, and ensuring an ample supply of pure water: and along with all this, the provision of better dwellings for the industrial classes, of open spaces and recreation grounds, of sufficient bathing-places, and generally of whatever tends to promote the health of town populations. In a word, if we have yet much to learn in the domain of art, we are raising buildings which command respect and admiration, and are achieving many and various useful and honourable public improvements.

JAMES THORNE.

METROPOLITAN CHARITIES AT THE PRESENT DAY.

The use and abuse of public charity is a subject which has long called for the earnest attention of statesmen and philanthropists, and although it is impossible to hope that it will receive any practical discussion during the ensuing session, which is already over-weighted with measures of vital importance, it may fairly be assumed that it will ere long appear in the political programme. Primary education is to a considerable extent legislated for. The machinery for carrying out the scheme of the Education Minister is in working order, objectors of every class, from those who hate religion down to those who hate music, have been satisfied, if not absolutely pleased by the conciliatory spirit which has animated the Government in dealing with this complex question, and the next Report will enable us to judge how far the anticipations of the Committee of Council are likely to be realized. At any rate ignorance will no longer be a misfortune, but in more ways than one it will come under the category of actual crime, for unless the system in its reality proves very different to that which it appears to be on paper, no man in England will henceforth have any excuse for allowing his children to grow up without the advantages of a certain amount of teaching and training. Scarcely less important is the subject of Local Government, to which Mr. Goschen was directing his energies when he was removed from the Poor Law Board, and which, to those who have given it even the most cursory consideration, stands out in all its naked ugliness as a very cancer in the national body. Intimately connected as it is with alms-giving in all its branches, it will naturally claim prior notice in the House of Commons, inasmuch as the blundering of guardians and vestrymen and the waste of local taxation inevitably result in an increase of poverty, and a corresponding demand upon those large-hearted individuals who are too often called upon for assistance in cases where, if the rates were properly expended, they never would be applied to at all. Mal-administration in one form or other is the cause of half the misery existing in our large towns, and the man who reforms the Poor Laws will therefore, to a very great extent, pave the way for a subsequent inquiry into the conduct of our charitable institutions. There are, in fact, no two points on which the majority of Englishmen are so lamentably ignorant as on the distribution of the local rates, which they grumble at paying but pay nevertheless, and the disbursement of the funds poured into the exchequers of the numberless religious societies and benevolent funds. An additional penny on the income tax, even if there be a logical excuse for the impost, is sure to cause an uproar in the country, although it only produces in the gross about a million and a half sterling, and yet the ordinary British householder will submit to far heavier burdens when they are laid upon his shoulders by his neighbours, and will not venture to inquire into the method by which his money is expended. So

too with our great charities. Those who scan narrowly the debates on Imperial balance-sheets, and make an effort to fathom the depths of the finance accounts annually furnished by the Treasury, seldom take the trouble to look into the arrangements of the societies to which they contribute, although perchance they lend the aid of their name and influence, as well as of their purses, to promote the object in view. These facts, unpalatable as they are, and obviously inconsistent with the due discharge of those duties which are incumbent on every man as a citizen and a friend of the poor and oppressed, cannot be contradicted, and it is only when figures are brought forward that the real extent of the evil is ascertained. Leaving the question of local taxation then, we propose in the present paper to set forth, in outline at least, the number, character, income, and expenditure of the chief institutions for which appeals are constantly being made, and we shall then endeavour to show, as far as possible, what appears to us to be the most practicable means of reducing the number of useless societies and of securing a better result for money laid out in all cases. In taking this survey we shall, of course, confine our remarks to those charities which have their centre, if not their immediate field of operation, in the metropolis, leaving still untouched that vast cluster of benevolent institutions to be found in every town and village in the kingdom.

And first, looking at the hospitals, and what may be termed the purely medical charities of London, we find ourselves almost startled by their number and importance. The "doctor," to use the familiar term bestowed upon the medical profession, as if the title were their property by prescriptive right, has always been regarded as the "poor man's friend," and it is a pleasant fact that no charities are more heartily supported, more thoroughly satisfactory in their working, or more beneficial to the masses of our population than those in which physicians and surgeons are the active agents. The hospitals of London naturally divide themselves into two classes, those for the treatment of general cases, and those for the reception of patients suffering from special maladies, deformities, or accidents. To these may be added a supplementary list of dispensaries which serve to supply the immediate wants of the poor in various localities, and have increased very largely in number of late years. The following are the

GENERAL HOSPITALS.

	Date of Formation.		Date of Formation.
St. Bartholomew's	1547	North London, or University	1833
St. Thomas's	1553	Metropolitan Free	1836
Westminster	1719	Middlesex	1836
Guy's	1721	King's College	1839
St. George's	1733	St. Mary's	1851
London	1740	Great Northern	1856
Charing Cross	1818	West London	1856
Royal Free	1828		

St. Bartholomew's, which stands first on the list in order of

foundation was established on the site of an ancient priory, and it is interesting to notice that the modern institution strictly fulfils in spirit the intention of the old founder Rahere, who devoted his substance to "the continued relief and help of an hundred sore and diseased." The institution was re-established in 1547, when its managers obtained a Royal Charter, and from that day to this it has nobly fulfilled its mission as a hospital and medical school, serving not only to relieve the immediate sufferings of those brought to its gates, but—and this is an equally useful function of the modern system—has offered effective means for the future prevention of illness by advancing the science of pathology, and providing a school of practice for the student. The hospital contains 676 beds, 400 for surgical cases, 26 for patients suffering from ophthalmic diseases, and 250 for women. Each ward is under the care of a "sister," with numerous nurses, forming in all a body of about 120 assistants to the medical officers. It will give an adequate idea of the relief afforded when we state that on an average 6,000 patients are admitted in the course of every year, being more than 16·4 per day, while 100,000 medical and surgical out-patients or 273·9 per day are relieved, including those brought as cases of accident. In many instances they are supplied with money and necessaries on leaving the hospital. The average income is 40,000*l.*, chiefly derived from funded property. *St. Thomas's Hospital*, the new buildings for which have recently been opened on the Thames Embankment, was founded only six years after the re-establishment of St. Bartholomew's. It now contains more than 600 beds, but the number of in-patients has hitherto not amounted to more than one-third of those at the former institution, although the income appears to average about the same. Passing over a century and a half we come to the period when the *Westminster Hospital* in the Broad Sanctuary was founded in 1719. It is built on a far smaller scale than the first named institution and is only capable of accommodating 191 patients. The average number under treatment is 146. Last year 26,657 patients or 73 per day were relieved, but of these only 1,756 or 4·8 per day were in-patients. The expenditure for the year was 7,381*l.* A special and very valuable feature at this hospital is the fund for relieving patients who are discharged owing to their being found incurable and therefore no longer fit objects for treatment, although their need of assistance is intensified by the fact that their ills can only be alleviated and never wholly remedied. It is indeed one of the most melancholy duties which the hospital surgeon is called upon to perform, when he is compelled to discharge an incurable patient, and it would be well if a similar fund to that existing at Westminster could be attached to all like institutions. *Guy's Hospital*, the only one directly named after its founder, was established in 1721, by Thomas Guy, Esq. From its position in the Borough, it is naturally the great resort of the poor on the south banks of the Thames. It accommodates on an average 510 inmates, the total number of in-patients in

the year being about 5,000 or 13·7 per day, and of out-patients 70,000 or 191·7 per day. The annual income is 40,000*l.* of which about 30,000*l.* is available for hospital purposes. At *St. George's Hospital* which provides for the extreme west of the metropolis in the neighbourhood of Hyde Park, there is accommodation for 350 in-patients. At the *London Hospital*, situated at the other end of the great city in the Whitechapel Road, there are 590 beds, 190 being wisely appropriated for cases of accident, which in the midst of a large working population, are, it is needless to say, of very frequent occurrence. The number of in-patients in 1870 was 5,213 or 14·2 per day, and of out-patients 63,736 or 174·6 per day. The ordinary expenditure for the year was 33,342*l.* From their central position, *Charing Cross* and *King's College Hospitals* are the most important of the remaining institutions, and the fact that the reliable income of the latter only amounts to one-third of its expenditure gives it a special claim on the public as its management both medically and financially is unexceptionable. Each of the other hospitals on our list fulfils the same good work in its own immediate district, and of all it may be said that the funds at the disposal of the authorities might be increased with advantage. In such cases donors need not hesitate as to the appropriation of their gifts, for the applications made to the governors for orders for admission so far exceed their powers of supply that no doubt can be entertained as to the actual need of each separate establishment.

Under the head of hospitals, infirmaries, and surgical societies for special objects, we find upwards of 90 distinct organisations. Of these 10 are for children, 9 are lying-in-hospitals, 6 for chest diseases, 5 for diseases of the eye, 5 for skin diseases, 5 for consumptive patients, 3 for epilepsy and paralysis, 3 for diseases of the feet, and the remainder for single diseases. In the miscellaneous class we find hospitals for accidents, cancer, cripples, diseases of the teeth, diseases of the ear, fever, fistula, diseases of the heart, diseases of the legs, rupture, small-pox, spinal diseases, stone, diseases of the throat. Then, there are hospitals for classes of persons as well as of diseases, such as the Soldiers' Hospital at Woolwich, named after Lord Herbert, and the Jewish hospitals. The Homœopathists, and the Mesmerists have establishments conducted on their own systems, while there is also a galvanic institution. The hospitals for children are specially worthy of commendation, and we are glad to see that their number is being multiplied year by year. One of the last established is the Evelina Hospital, in the Southwark Bridge Road, founded in 1869 by Baron Ferdinand de Rothschild, in memory of his wife, after whom it is named. It contains accommodation for 300 beds. Dispensaries for the supply of medicines, and in some cases for the treatment of the sick poor at their own homes, have sprung up in every quarter of the metropolis and its suburbs. The majority of these admirable institutions are supported by voluntary contributions, but occasionally the patients are required to pay a small sum for the privilege of medical

treatment and medicines, and in one or two instances they have been made self-supporting, somewhat after the manner of a benefit society, except that medical treatment is the only object for which the members make their payments. There are about 50 dispensaries in London and the suburbs, the benefits being strictly confined to residents.

In connection with the whole question of medical charities a report has just been issued by a committee of the Charity Organisation Society, in which the opinion is expressed that the present admission of cases as out-patients at the hospitals is too indiscriminate, and is calculated to exercise a pauperizing influence upon the working classes. The remedy proposed is to establish provident dispensaries in the various districts of the metropolis, and as far as possible throughout the kingdom, at which the medicines and advice now given on the out-patient system would be administered at a low tariff of charges, thus tending to encourage independence and self-reliance among the members. This is, undoubtedly, a wise proposition, but we question whether the committee is not inclined to overstrain its principle to some extent, and its belief that "many of the 54,175 out-patients relieved in 1870 were well able to defray the charges of a local practitioner," and that "a still larger number were quite in a position to pay the 6*s.* or 8*s.* a-year required for securing advice and medicine when ill," is, we believe scarcely capable of support from actual experience. Unquestionably there is always a danger of creating habits of improvidence among the people by furnishing them too freely with medical treatment at the expense of others; but, any one who has watched the gathering of poor creatures with out-patients' orders at the gates of one of our London hospitals, or who is acquainted with the ordeal through which they have to pass, and the length of time they have to wait before they can receive attention, will scarcely give implicit credit to the assertion that they are as a rule capable of paying for advice at their own homes. Added to this it must be remembered that the women and children who constitute a large proportion of the patients are frequently the victims of the vice of their husbands and fathers, and that if it were not for the kindly aid of a clergyman, or some other friend, who bestows the hospital order, they would be left altogether without assistance. It must not be forgotten, too, that the advice received at the hospital is to the poor what the consulting physician's opinion is to the rich, and thus even those who would in ordinary cases trust to the local medical man, or to the chemist, make an effort to obtain the higher authority. This is a natural result of the popular faith in the excellence of the treatment afforded at these great medical schools, where all the latest improvements and the most recent discoveries are acted upon long before they reach the parochial surgeon, and while, therefore, we strongly commend the principle advocated above, we should be sorry to see any strict rule laid down which might prevent cases of real necessity from obtaining relief. If, for instance, the

committee could obtain general co-operation from the clergy, and other unpaid almoners, and were in a position to give its agents power to decide as to the fitness of persons for hospital treatment either as out- or in-patients, it is impossible not to see that any such test as the income of the head of the family would be a very fallacious one, for in many instances the children who needed relief would be deprived of it by such a rule. At the same time, we cordially agree with the theory propounded, and we believe it would be an immense step in advance if medical men in our poorer neighbourhoods were to adopt some regular and graduated scale of charges, in order that the artisan might not fear to "call the doctor" owing to his doubts as to the ultimate cost of the proceeding. When the Poor Law Dispensaries which are now being established are in thorough working order, one of the most prominent faults in our present system will have been remedied, and if Provident Dispensaries or Medical Benefit Societies—for that is what they really are—can be formed as supplementary institutions much good will have been effected. Care must be taken however, not to close any of the channels at present open to the poor, until they have learnt to provide for themselves, and the over anxiety to systematize and organize must not be allowed to stand in the way of the really useful work which is being done even if at times the worthless as well as the deserving reap the benefit.

The plan propounded by the Committee above referred to for promoting the spirit of self-reliance on which they lay so much stress is, in effect, to bring to bear upon the question of medical treatment, the co-operative system which has been adopted with so much success in other matters. The object of a Provident Dispensary as stated by them, should be "to enable such persons in the district as cannot pay for medical attendance at the usual charges, but are not in the receipt of Poor Law relief, to secure for themselves and their families the advantage of medical attendance, advice, and medicine during illness." They further recommend that applicants should be called upon to prove to the satisfaction of the committee of management that they are unable to pay for assistance at the usual charges, and the following scale is suggested for adoption :

	Town per month.	Country per month.
A. Adults over 18 . . .	6*d.*	4*d.*
B. Young persons (14 to 18) .	4*d.*	4*d.*
C. Man and wife . . .	10*d.*	8*d.*
D. Children under 14 . . .	2*d.*	2*d.*

Not more than four children under 14 shall be charged for in any one family.

This is all feasible enough. The difficulty will of course consist in inducing people to submit to the test of the Committee as to their being fit objects for membership, but as this is the keystone of the scheme, it would be absurd to propose any deviation from the rule, although in many dispensaries

already at work, the fact of persons making application for admission is deemed a sufficient qualification, the presumption being that they would not come *in formâ pauperis* unless they were compelled to do so, a theory which has also been adopted in the distribution of out-patients' orders for the hospitals. Whether the Report meets with general approval or not, there can be no doubt that more care is needed on the part of governors and others who exercise the patronage of the free institutions, as to their choice of the recipients of relief, and if it is a fact, as stated by Dr. Stallard, at a conference of Poor Law Medical Officers recently held, that "persons obtain medicines at hospitals and sell them at the doors, there being a regular trade in cod-liver oil, pills, and other medicines thus obtained," there is *primâ facie* evidence for complete investigation.

Closely connected with our hospitals and dispensaries, and indeed inseparable from them, if their work is to be properly carried on and completed, are the convalescent institutions which form one of the latest and most valuable fruits of modern philanthropic effort. When the hospital surgeon or physician has effected his cure, the patient is but too apt to relapse, through weakness and lack of proper nourishment, or from the want of that best of all of nature's tonics, "change of air," and then it is that the Convalescent Home steps in and carries him off to the sea-side or the country for two or three weeks. The population of the ten metropolitan Parliamentary boroughs, according to the census of 1871, is 3,008,101, and the number of inhabited houses, 380,295, giving a proportion of nearly 8 persons to each house; but even admitting the accuracy of the latter figures, which, owing to the difficulty of obtaining trustworthy information, are scarcely reliable, the average of 8 people to a house conveys a very faint idea of the frightful condition of over-crowding prevailing in the metropolis, which renders convalescence from a serious illness so tedious among the poor and hard-working. Even according to the census tables the average in densely inhabited districts, such as Whitechapel, St. Giles's, Holborn, Clerkenwell, and St. Luke's, is much larger, varying from 10 to 11 per house; and when it is remembered that these figures include the rich as well as the poor, the houses with one or two inhabitants, as well as those with 20 or 30, it will be obvious that such tables afford very little idea of the actual state of the case. A visit to St. George's in the East, however, or to Bethnal Green, will readily convince any one as to the ordinary condition of the homes of the mass of the people, and when to the impure atmosphere, the insufficient water supply, and bad drainage, we add the normal state of noise and disturbance prevailing in such localities as Ratcliffe Highway or Seven Dials, no further evidence will be needed as to the utility or necessity of these institutions. Without their aid, indeed, perfect recovery would never be attained in the case of patients suffering from eruptive fevers and other diseases, the results of which are often more serious and more difficult to eradicate than the actual illness with the first attack.

Again, at times when cholera and small-pox are epidemic, the need for such institutions is specially felt, and many of those in existence owe their origin to what was at the time regarded as an ephemeral evil. When once used, however, their value became too apparent to allow them to be discontinued, and thus the system now forms a distinct branch of the metropolitan charities. The sea side is naturally chosen as a favourite spot for such homes; but others, and among them the Metropolitan Convalescent Institution, which was, we believe, the first of its class, are established in country villages. In *Low's Handbook* for the year 1857, only two convalescent homes were included, but in the last edition the number had increased to 20, and others have since been established. This is enough to prove that the demand is increasing in proportion to the supply.

For confirmed invalids there are but few homes, and the majority of those at present open are for persons in the middle and higher ranks of society, some of them also being comparatively self-supporting. For Incurables there are five institutions, of which the most important are the *Royal Hospital*, at Putney Heath, and the *British Home*, at Clapham Rise. The first of these, founded in 1850, contains 137 inmates, and gives a pension of 20*l.* to 277 others. The inmates are drawn from people above the pauper class, and chiefly consist of cases discharged from ordinary hospitals. The British Home, established in 1861 at a meeting held at the Mansion House, works on the same system, affording accommodation to about 80 inmates, and giving pensions in 147 cases. In order to provide another institution of the same character, the want of which is every day being more and more felt by the medical officers of the general hospitals, funds are now being raised, and a public meeting was held last year, when, under the title of the *National Hospital for Incurables*, its claims on support were advocated by the Duke of Northumberland, the Marquis of Salisbury, Mr. Gathorne Hardy, and other well-known men. The proposition to establish it in Oxfordshire seems likely to commend itself to the public, inasmuch as the distance from town will be immaterial, the journey having only, as a rule, to be made once in the patient's life, while the land will be considerably cheaper. Another wise resolution is that which will place the orders for admission in the hands of a medical board. Private benevolence has provided a home of a similar character for ladies at Mount Greville, Kilburn; and women are also specially cared for at one of the institutions superintended by Miss Twining, in Great Ormond Street. At a time when money is lavishly spent on societies which altogether lack any just cause of existence, the work of these institutions deserves attention, for there can be no two opinions as to the necessity existing for them and the utter inadequacy of the present number.

The last class of charities which comes under the medical division is that for the provision and training of nurses, a very necessary link in the chain. The art of nursing is in itself a

modern study in so far as it relates to the tender care of the inmates of our hospitals and infirmaries, and the honour of drawing the attention of the people of England to this most womanly of all woman's work is due to Miss Florence Nightingale, whose exertions in the Crimean war will never be forgotten. It was in fact owing to her refusal to accept a testimonial which was subscribed for by the public in recognition of her self-denying and heroic labours by the soldiers' bedsides, that a very important scheme for the training of nurses was set on foot. The sum of about 50,000*l.* having been collected, Miss Nightingale declined to receive it under any other conditions than that it should be placed in the hands of trustees for the training of nurses. A council was formed for its direction, and she only reserved to herself the right to give advice. The training school has been established at St. Thomas's Hospital, where twenty-two or twenty-three probationers are maintained and instructed. At present they are all required to serve in public hospitals and infirmaries. Several similar funds exist in connection with the Church of England, varying to some extent in their regulations as to the dress of the "sisters," as they are now generally termed, but all conducted on the same broad principles. One of the oldest of the institutions is that of the *Nursing Sisters* in Devonshire Square, Bishopsgate, founded in 1840. Nearly 100 sisters are constantly employed in connection with it, besides several probationers. They are allowed an annual stipend of from 25*l.* to 30*l.*, are supplied with an appropriate dress, and are maintained in the Home when they are unoccupied. Pensions of 20*l.* are also awarded to them after twelve years' work if they find their strength failing. More distinctly ecclesiastical in its arrangements is the *London Diocesan Deaconess Institution* established in 1861, which definitely aims at the revival of the female diaconate in the Church, and does not strictly confine its work to nursing, although that is its main object. At this institution there are several sick wards, where cases requiring long and careful treatment are received. The nurses, the majority of whom are ladies by social position, undertake work in the country when their services are called for by the clergy or by hospital authorities. Their labours in this important particular have largely aided in the removal of the old prejudices against the employment of members of sisterhoods in hospitals and workhouses, which are gradually dying away, and although the number of ladies willing to devote themselves to such arduous, and in many cases absolutely repulsive duties is never likely to be large enough to supersede the services of women of the lower ranks, even if it were desirable to do so, the benefits thus conferred on the suffering poor have been incalculable.

Having thus far considered the charities which provide for cases of actual illness or accident, we will now proceed to notice a still more numerous class of institutions, the foundation of some of which carries us back far into the past, and which may be described generally as—

Asylums and Almshouses for the Aged.

Of these there are about 120; the most important being included in the following list compiled from "Low's Handbook:"—

	Founded.
Aged Pilgrims'	1826
Aged Poor	1699
Alleyn's	1620
Amyas's	1655
Annuitants' Home	1856
Armourers and Braziers'	1551
Aske's Hospital	1692
Ayre's	1617
Badger's	1698
Bakers' Company	
Bakers', London Master	1832
Bancroft's	1728
Beer and Wine Trade	1834
Berman's	
Bethnal Green	1722
Bookbinders'	1830
Booksellers'	1843
Boot and Shoe Makers'	1836
Butchers'	1828
Butlers'	1675
Cambridge Asylum, Royal	1851
Camden and Kentish Town	
Caron's	1622
Carvers and Gilders'	1822
Charter House	1611
Chelsea Hospital	1692
Christian Union	1832
Cook's (Captain)	1673
Cure's	1584
Cutlers' Company	1417
Davis'	1793
Dramatic College, Royal	1859
Dulwich College	1619
Dutch	1733
Edmonson's	1706
Edward's	1717
Emanuel College	1594
Fishmongers	
Framework Knitters'	1727
French Protestants	1708
Fuller's	1592
Gefferey's	1703
Gibson's	1840
Governesses'	1843
Hackney Road	1836
Harmar's	1713
Heath's	1648
Hedger'	
Hill's	1708
Hillier's	1800
Hinton's	1732
Holles'	1539
Honnor's Home	1859
Hopton's	1730
Huggens' College	1844
Judds'	1551

	Founded.
Leathersellers'	1544
Licensed Victuallers'	1827
London Institution	1832
London Maritime	1790
Lumley's	1672
Masonic, Royal	1842
Medical Benevolent College	1851
Megg's	1558
Melbourne's	1535
Mercers' Company's, various.	
Metropolitan Benefit Societies'	1829
Monox's	1686
Morden College	1695
Moses's	
Norfolk College	1613
Overman's	1771
Owen's	1609
Palmer's	1654
Parish Clerks'	1831
Pemell's	1698
Pinner	1850
Porter's	1826
Printer's Pension	1827
Queen Elizabeth's College	1576
Rippon's, Dr.	1866
Rogers'	1612
Saddlers' and Harness Makers'	1862
Sailmakers'	
St. Clement's	1849
St. Giles and St. George's	1656
St. Katherine's Hospital	1145
St. Martin's-in-the-Fields	1817
St. Marylebone	1836
St. Pancras	
St. Saviour's	1827
Salters'	1775
Sion College	1630
Smiths'	1584
Stafford's	1638
Stansbedd College	1851
Strode's	1703
Surrey Chapel	1811
Tailors'	1837
Tancred's	1721
Tilers' and Bricklayers'	
Trinity Hospital and Almshouse	1537
Underwood's	1733
Vintners'	1466
Walters'	1651
Watermen's & Lightermen's	1839
Weavers'	1725
Westby's	1749
Whittington's College	1421

From this table, to which we have added the dates of the various foundations, as far as we have been able to ascertain them, it will be seen that the good old custom of providing homes for the aged has almost entirely fallen into desuetude at the present day. With the exception of a few trade asylums,

and one or two homes for widows of soldiers, there is not a single institution of recent foundation in the above list, and the majority of them were in existence before the year 1800. This is to be regretted, for although in some few cases, funds have been diverted from the purposes for which they were intended, and have been transferred to persons who have no claim upon them, there is no form of charity which, when properly administered, is more really beneficial. Every almshouse or asylum of this nature is in effect a means of escape from the workhouse for a certain number of the infirm and worn out, and although theoretically the proper place for those who, owing to misfortune, are unable to earn their living, is unquestionably the establishment provided by the parish, it is impossible not to sympathise with the disinclination which is felt by persons who "have seen better days," to enter such a place. The English workhouse has acquired a very unenviable notoriety, and those who in reality are least deserving of aid too often enjoy the greatest comfort within its walls. Whether under a happier state of Poor Law administration this antipathy to "the house" might not be removed, is another question, but even under the most satisfactory auspices a large portion of the population will always, through no fault of their own, become in their declining years fit objects for admission to such Institutions as those named above. The City Companies' Almshouses form, perhaps, one of the best illustrations of the truth of our statement, as in every case they are filled by persons whose claims are beyond all question, and who have been reduced to want through sheer incapacity for work. The hard-headed economist may of course argue that persons who have not provided against the rainy day ought to be content with workhouse fare, but happily our forefathers took a different view of the matter, and hence we are still able to provide for many of the sufferers. A reference to the above list will show that there is scarcely a single trade or profession which has not thus some refuge for its poorer members while nearly every district in and around London has its institution for aged residents. The mismanagement which has taken place in certain instances can scarcely be denied, but that is only an argument against the working of the system and not against the system itself.

The case of St. Katherine's Hospital which has recently occupied the attention of Parliament is a notable instance of the manner in which the funds given for a special locality have been diverted to the benefit of individuals who can scarcely be said to be fitting recipients of the bequest. The Hospital, endowed in 1145, and thus forming the oldest foundation of the kind in London, originally stood on the site of St. Katherine's docks. Its removal largely increased the revenues owing to the compensation given by the Company to the master and brethren, but no one who studies the history of the institution can doubt that the only logical manner of fulfilling the spirit of the will of the Royal foundress would be to devote the funds to the benefit of

the population of the district where the building originally stood. In former days, as a writer in the *Globe* recently pointed out, the master and three brothers—all priests—assisted by three sisters of charity, devoted themselves to the surrounding poor. Twenty-four mendicants were daily relieved at the gates. One thousand poor received yearly the alms of the hospital, and poor scholars were educated and maintained within its walls. For hundreds of years the institution thus fulfilled the intentions of its founder. But on the dawn of the Reformation the charity was secularised, and gradually from that date it lost its original character, and became at last not so much an hospital for the relief of the poor and needy as a retreat for pensioners who were thought worthy of Royal bounty. In 1681 it began again to assume its original character, and clerical brothers re-appeared, but it never recovered its former efficiency. When St. Katherine's Docks were made, the hospital was removed to its present position in the Regent's Park. Thus transplanted from a thickly-populated district to one where, comparatively speaking, there is no scope for a charitable institution of this kind at all, the revenues of the hospital have been, to a great extent, wasted. The property brings in at the present moment upwards of 7,000*l.* a-year, and the income in a few years will be doubled. Out of this revenue the master has been receiving 2,000*l.* a-year, three brothers have been receiving 300*l.* a-year each, and three sisters 200*l.* a-year each. It should be stated that besides this allowance, each brother and sister has a separate house and sundry emoluments. There is also a chaplain attached to the hospital, who receives 100*l.* a-year. The office of the master for years past has been a sinecure. The brothers and sisters reside four months in the year. Two of the former have large livings in the country; one is chaplain at Dieppe. There have been some pensioners attached to the hospital and a school, but out of the whole revenue of 7,000*l.* a-year only about 1,200*l.* has been spent on actual charity; the rest has gone to defray the emoluments of the officers and the expenses of the estate. This being a plain statement of facts, no one, we think can deny that the agitation for reform is well founded, and we trust it will succeed.

Some of the institutions owe their origin to curious causes, and among others it may be noted that the *Institution of the London Almshouses* at Brixton was founded from a bequest given to provide an illumination to commemorate Reform in Parliament, a very satisfactory appropriation of the property. The *Licensed Victuallers' Asylum* was the result of the efforts of a few members of the trade to establish the *Morning Advertiser* as their organ, the profits being set apart for the benefit of their distressed brethren. Even parish clerks, a profession now almost out of date, except in those places where the venerable functionary is irremovable owing to some ancient statute, have their Asylum, but it is, we believe, intended only for the use of persons who have regularly subscribed to its funds, and is thus rather a provident institution than an almshouse.

Kindred in character, although founded on a different principle are the

BENEVOLENT AND PROVIDENT FUNDS AND PENSION SOCIETIES,

of which there are nearly 150 in the metropolis. These again present a striking illustration of the thriftiness and provident habits which, notwithstanding all assertions to the contrary, form an unquestionable characteristic of the English artisan and tradesman. Not a single trade is there that we can call to mind which has not one organisation or more for the mutual benefit of its members. Thus we have funds supported by the following :—

Agriculturalists.
Architects.
Army Medical Officers.
Artists.
Beer and Wine Trade.
Bookbinders.
Booksellers.
Brassfounders, Braziers, and Coppersmiths.
Builders.
Butchers.
Cheesemongers.
Choir Singers.
Clergy.
Clerks.
Coachbuilders.
Coffee-house Keepers.
Commercial Travellers.
Cooks.
Domestic Servants.
Dramatic, Equestrian Performers.
Dressmakers.
Fishmongers and Poulterers.
Freemasons.
Furniture Brokers.
Gardeners.
General Porters.
Goldsmiths.
Governesses.
Grocers and Tea Dealers.
Hair Dressers.
Hotel and Tavern Keepers.
Iron, Hardware, and Metal Trades.
Job and Postmasters.
Law Clerks.
Leather Trades.
Licensed Victuallers.
Linen and Woollen Drapers.
Literary Men.
Master Mariners.
Market Clerks.
Master Bakers.
Master Boot and Shoe Makers.
Medical Men.
Milliners and Dressmakers.
Miners.
Music Hall Performers.
Musicians.
Naval Men.
Newsvendors.
Operative Coach Makers.
Organ Builders.
Painters.
Paper Manufacturers.
Pawnbrokers.
Pharmaceutical Chemists.
Printers.
Railway Servants.
Sacred Harmonic Society's Choir.
Schoolmasters and Mistresses.
Scientific Men.
Scripture Readers.
Servants.
Ship Brokers.
Silver Trade.
Solicitors.
Stationers.
Tailors.
Tallow Chandlers.
Theatrical Performers.
Vellum Binders.
Virtuosi.
Warehousemen.
Watch and Clock Makers.

Beside the above there are numerous pension funds open to the general public, and others for the benefit of persons born or resident in special districts. Thus, the Herefordshire, Westmorland, Wiltshire, and Worcestershire Societies, are of great assistance to the natives of their respective counties. There are also several pension funds for foreigners, arranged according to their nationality and managed as a rule by their own countrymen. If to these were added the vast number of benefit societies, registered under the Friendly Societies Act, the building societies which are all worked on the same mutual investment principle, and lastly the insurance clubs and savings banks managed by the Govern-

ment and by public companies, we should arrive at a conclusion which would be highly creditable to the laborious bread-winners among our town populations, who it must not be forgotten have in these days of high rents, increased prices of provisions, and heavy local taxation, a by no means easy task to supply the present wants of their families, irrespective of making a suitable provision for the future. These charities, then, form one of the most pleasant branches of our subject, in fact they ought scarcely to be included in the category at all, for although they are partially indebted to the donations of the heads of the various firms, their strength lies in the co-operation of the individual members.

While the trades and peaceful professions of the home-staying portion of the population are thus well provided for, the country has itself undertaken to relieve the wants of our sailors and soldiers, their widows and orphans, and a series of funds have been established with this object, which may conveniently be termed

Patriotic Funds.

The principle on which subscriptions have been raised to meet emergencies caused by the wars in which England has been engaged is unquestionably sound, inasmuch as it is only right and just that the families of our national defenders who fall in the exercise of their duty should be provided for, and that those who are seriously injured should be saved from the necessity of going to the workhouse on their return home ; but it is open to doubt whether the present system of Government pensions and gratuities is calculated on a fair basis, and whether if it were more liberal the need for extraneous assistance would not be removed. In order to give some idea of the extent of these funds, a full summary of their receipts and expenditure from the year 1800, was recently contributed to the *Pall Mall Gazette* by the writer of the present paper, from which some of the following facts and figures are quoted :—

The earliest of the funds still in operation is that known as "Lloyd's Patriotic Fund," which was formed on the 20th of July, 1803, at a meeting in the City, chiefly attended by the underwriters and others engaged at "Lloyds," who voted 20,000*l.* out of their funded property, in addition to their private contributions, towards the relief of the sufferers in and from military and naval actions. This amount was speedily increased by subscriptions from all parts of the kingdom, and up to March, 1870, the receipts, including interest and profit on sale of stock, amounted to 820,818*l.* 6*s.* 10*d.* A considerable balance remains, and is being dispensed in pensions to the relatives of men killed during the wars in Russia, China, and New Zealand, the sufferers from the Indian mutiny not being admitted to the benefits of the fund.

The "Central Association in Aid of the Wives and Families of Soldiers on Active Service" is the second fund claiming our

notice, and this seems to have been managed in such a manner that, after fulfilling its objects by maintaining the families of men during their absence in the Crimea, and providing for many of their widows and orphans, its funds, amounting to 123,529*l.*, were nearly exhausted. The balance was devoted to the endowment of a Soldiers' Infant Home at Hampstead.

With the third fund on our list, generally known as the Patriotic Fund, which is managed by a Royal Commission, the case is totally different. Its main object was to provide for the relief of the widows and orphans of the soldiers, sailors, or marines who were killed or died on active service during the war with Russia, and so large were the subscriptions that in 1854 upwards of a million sterling had been paid to the account of the Commissioners at the Bank of England. It soon became evident that after making a most liberal provision for the wants of all who had any claim upon the fund according to the original design of its founders, a considerable balance would remain, and the Commissioners themselves declared that "the claims fell considerably short of the number they estimated for." That this has proved correct is shown by the fact that the committee are now preparing to grant pensions for the relief of sufferers by other wars. From the statements appended to the first report of the supplementary commission appointed on the 26th of March, 1868, it appears that the total sum received up to the last day of that year was 1,460,718*l.* 6*s.* 2*d.*; that the capital then remaining was 509,340*l.*, producing annually 22,370*l.*, in addition to which 32,478*l.* is derived from annuities, thus making the present gross income 54,848*l.* The actuary reports that, after setting aside one-tenth for the liabilities as a reserve to meet contingencies, there will be an available surplus of 108,300*l.* We find, however, no balance-sheets by which the annual expenditure can be checked, the accounts not having been audited since 1866. The delay in their preparation is said to have arisen "from exceptional circumstances which are not likely to occur again."

Passing on to consider the Victoria Asylum at Wandsworth, which was established for the maintenance and education of 300 orphan daughters of soldiers and sailors, we learn that for the purchase of the land and the building and its endowment 218,073*l.* was appropriated from the original fund; but even this large amount has failed to keep the institution free from debt, owing, we are told, to the size of the asylum and its peculiar construction and arrangements, which render it most expensive to manage. The rates and taxes alone amount to 600*l.* a year. This being the case, and bearing in mind that not more than 260 instead of the 300 children for whom provision was made have been admitted, there is fair ground for questioning the wisdom of the system adopted, more especially as it is stated that the lady superintendent has been 'superseded' on account of her inability to account for certain sums of money. A farm and garden consisting of about fifty acres are attached to the asylum, on which a bailiff is at work with a staff of labourers, but on this also there

is a deficiency, whereas the professional opinion of Mr. Sanderson on the system pursued in its management is that it ought to be most profitable, and that after supplying the asylum with produce at wholesale prices there ought to be a considerable margin to the credit of the commission. We should be curious to see a statement of the average annual cost of each child from the foundation of the institution down to the present day, showing the relative saving or the reverse in each year, and, unless we are much mistaken, the addition of such a comparative table to the report would astonish even the Commissioners, if it were placed side by side with the results of the system pursued at our orphan asylums.

In regard to the official staff of the commission it is again difficult to form a clear opinion without the aid of the balance-sheets, the absence of which is a great drawback. It appears, however, that from 1854 to 1868 the establishment consisted of ten persons, with Captain (now Admiral) E. G. Fishbourne and W. H. Mugford, paymaster, both of whom had been formerly naval officers, at their head. On the retirement of Admiral Fishbourne he received out of the funds of the commission an annual pension of 300*l.*, after thirteen and a quarter years' service as 'honorary' secretary with 600*l.* a year. This, remembering the source from which the funds were derived, seems a curious proceeding more especially as the 'reduction' of the staff caused by his retirement and the discharge of another clerk is subsequently quoted by the Commissioners as bringing about a saving of 400*l.*, while if the pension of 300*l.* is deducted the saving is reduced to 100*l.* At the same time we fail to understand the system on which the pension was calculated. If Admiral Fishbourne had served thirteen years under Government as a clerk, he would even on 'reduction of office' have received only eighteen-sixtieths of his pay at the time of leaving, which at the full salary of 600*l*, would have given him 180*l.*, but as he left apparently from choice he would only have been entitled to thirteen sixtieths, or 130*l.* The pension was of course sanctioned by the Commissioners and the Queen ; but it is difficult to ascertain any just grounds for granting it out of funds given by public charity, as the recipient had already been well paid for the services he had rendered. The outlay in official salaries for 1868 was 2,041*l.*, which largely exceeds that of the Indian Mutiny Fund, reported in 'Low's Handbook to the Charities of London,' as amounting to 500*l.*, or of the Peabody Fund, stated to be 293*l.* The cases are not, indeed, absolutely similar, but as the Commissioners state that the data upon which they grant pensions are supplied by the Admiralty and War Offices, and are reported on by the Executive Committee and not by the clerks, it follows that the work of the latter must be of a mere routine character, and for this the establishment seems to be somewhat costly.

The Indian Mutiny Fund alluded to above is the last which we shall notice, and of this the accounts are so clear and so well posted up that there is no difficulty in obtaining explicit informa-

tion. From the balance-sheet for the year ending the 31st of December last we learn that the total sum raised was 440,200*l.* 18*s.* 6*d.*, of which 250,000*l.* was disbursed during the war and subsequently among the immediate sufferers; the balance, now standing at 155,261*l.* 18*s.* 6*d.*, being funded for the payment of annuities. The proceedings are under the management of officers appointed by the original promoters with Alderman Finnis as president.

Within the past year, however, a large addition to the number of patriotic funds has been made, although happily not owing to the wants of our own soldiers and sailors. The lengthened struggle between France and Germany called forth an amount of sympathy in this country which has seldom been equalled, and the belligerents on either side reaped the benefit of English liberality, without which their losses by famine and disease would have been scarcely less awful than those on the battle field. At the same time our national kindliness as usual led us too far, and more money was collected than was absolutely required, while many home charities were severely crippled in consequence. There were in all about twenty organisations involving a good deal of needless expense in the duplication of labour, and some of the Committees seem to have traversed almost the same ground as their fellow-workers.

The most prominent among the societies for the special benefit of the French was the "Société de Secours aux Blessés Militaires," with its central office at the Palais de l'Industrie at Paris —M. le Comte de Flavigny as its president, Mdme. la Maréchale Canrobert as its vice-president, and Messrs. Piesse and Lubin as its London representatives. Secondly, the "Souscription Française en Angleterre," with a London Committee headed by Messrs. Ch. Devaux and Co., of 62, King William Street. Thirdly, the "Société Française d'Angleterre pour les Blessés Français," with its central office at 13, Rue du Helder, Paris, and a London Committee, of which M. Léon Clerc was chairman, dating from 5, Red Lion Square. The fourth fund was raised in connection with the "French Protestant Evangelical Committee in Paris," the Rev. J. du Pontet de la Harpe, a Clergyman of the French Protestant Church in London, being the local Secretary, and Mr. A von Glehn, of Mincing Lane, the Treasurer. A fifth subscription was collected by the "French National Committee," of 9, Old Compton Street, Soho, in order to assist Frenchmen to return to their country to defend it, to enable their families to return to their native homes, and to aid their wives and children when left in England. Of this organisation, M. Marc Ratazzi was the leader. Sixthly, the "Colonial and Continental Church Society," a body which provides English Clergymen for continental chaplaincies, obtained aid in money and material which were dispensed mainly by its agents at Dusseldorf and elsewhere. The seventh fund, and the most important of those for the Prussian soldiers, was the "German Association in aid of the Wounded and Destitute," with Baron Schröder as its Chairman.

The eighth fund was the "Hülfsverein für verwundete Krieger," at 30, Stainton Terrace, St. Pancras, chiefly, of course, supported by Germans. The ninth, the "Victoria Stiftung," established by the Crown Princess of Prussia, to provide for the wives and children of the absent German soldiers, of which Mrs. Salis Schwabe was the English representative. Tenthly, there was an "Exhibition of Pictures for the Relief of Widows and Orphans of German Soldiers," to which a fund was attached with Mr. T. J. Gullick as Honorary Secretary. The eleventh organisation was a "Ladies Committee for the Relief of the Widows and Orphans of the Soldiers of both Armies," of which Mrs. Russell Gurney and Mrs. Salis Schwabe were the Treasurers. The "French Refugees' Fund," for the aid of young women of respectable French families who reached London from Paris friendless and destitute, made the twelfth fund having been established by the Marchioness of Lothian and other ladies. Of the same nature, although more immediately calling for the support of Englishmen, was the "British Charitable Fund in Paris," its main purpose being the relief of English ladies and others who were deprived of their means of livelihood by the sad events in Paris and the neighbourhood. Mrs. Thudichum's appeal for the "Field Hospital at Bingen," and a similar call for help from Dr. Laseron, of the Cottage Hospital, Tottenham, who went to the field of war with some nurses from his establishment, made the fourteenth and fifteenth funds, while others, among which the *Daily News* Fund for the Peasantry in the north-east of France, and the French Peasant Farmers' Seed Fund must be mentioned, were specially designed to help those who while not engaged in the war, had lost their means of employment, owing to the devastation of the country and the destruction of property.

While, however, these miscellaneous funds are worthy of note, the *British National Society for Aid to the Sick and Wounded in War* claims special attention at our hands. The report which is a formidable volume of 185 pages copiously illustrated with maps, presents a complete summary of the Society's operations. From the balance-sheet we learn that the total receipts amounted to considerably more than a quarter of a million, being :—

From subscriptions estimated at about 100,000 in number	£294,455
From proceeds of sale of stores, horses, waggons, and transport material	2,473
Total	£269,928
The expenditure (of which details are given below) amounted to	£223,716
And thus there is an available balance in hand of	£73,212

The credit side of the balance-sheet shows that 27,472*l.* was spent in food, wines, spirits, and medical comforts for the

disabled soldiers; that 28,971*l.* was devoted to the purchase of clothing and bedding; 8,090*l.* to the purchase of surgical instruments; and 7,866*l.* for various medical stores, disinfectants, &c. In addition to these amounts we find an entry of 2,111*l.* expended in buildings for hospitals and stores; 21,705*l.* on the transport service, including the purchase and hire of horses, vehicles, and forage, stable expenses, repairs, the packing and carriage of stores; and 23,845*l.* on staff allowances and expenses abroad, including the pay of surgeons, dressers, lay agents, infirmiers, drivers, grooms, porters, messengers, &c. The different other aid societies and ambulances, whose members by their local knowledge proved the best almoners that the committee could employ, were subsidized by the Red Cross Society to the extent of 89,898*l.* To these amounts must be added 2,086*l.* for salaries and wages at the office in St. Martin's-place; 8,627*l.* for office expenses, printing, stationery, postage, telegrams, advertisements, &c.; and 3,040*l.* for such miscellaneous expenditure as the loss by exchange of sums into foreign money, bankers' commissions and charges, insurance of stores, gratuities to "officials on the Continent," and rent of head-quarters in various places abroad.

How far the public will be satisfied to learn that the immense sum of 73,212*l.* remains untouched is a matter of opinion. Its investment to provide against future emergencies of a similar nature has, we believe, been finally decided on, but the fact that the balance exists suggests the reflection whether the committee, to whom high praise is due for their benevolent labours, were not acting wrongly in allowing appeals to be made and money received to a large extent, while home charities were suffering; while it is also worthy of thought whether it is wise to sink another immense sum which will, perhaps, like the Patriotic Fund, eat up a large portion of its annual interest in the office expenses and clerks' salaries. The public gave their money in nine cases out of ten to meet an immediate want, not to form a reserve fund for the future, and, although it might be a difficult task to ascertain the subscribers' wishes, it would be satisfactory to learn how far they agree with the proposed plan of disposing of the balance. At any rate, the moral to be drawn from all these cases is the same, and men who use every possible means of obtaining subscriptions from persons who, under the impulse of the moment, not unfrequently give more than they can afford, incur a grave responsibility. With the example of the Patriotic Fund before us, it is necessary to be cautious in all such matters.

For Sailors the following societies and institutions are constantly at work:—

British and Foreign Sailors' Society.
Admiralty Compassionate Fund.
Destitute Sailors' Asylum.
Greenwich Royal Hospital.
Lloyd's Patriotic Fund.
London Maritime Institution.
Marine Society.
Mariners' Friend.
Merchant Seamen's Corporation.
Merchant Seamen's Orphan Asylum.
Royal Patriotic Fund.
Royal Alfred Merchant Seamen's Asylum.
Royal Caledonian Asylum.

Royal Naval Female School.
Royal Naval Benevolent Institution.
Royal Naval School.
Royal Victoria Asylum.
Sailors' Home.
Sailors' Orphan Girls' School.
Seamen and Boatmen's Friend.
Seamen's Christian Friend.
Seamen's Hospital.
Shipwrecked Fishermen's Society.

For Soldiers and their children there are the following institutions, in addition to those supported by the Patriotic Fund alluded to above :—

Army and Navy Pensioners' Employment Society.
Cambridge Asylum.
Chelsea Royal Hospital.
Infant Nursery.
Royal Caledonian School.
Royal Military Asylum.
Royal School for Officers' Daughters.
Soldier's Daughters' Home.
Wellington College.

Institutions for Children.

Children, their wants, their crimes, and their education, have always occupied a large share of the philanthropist's attention, and a very considerable proportion of the Metropolitan charities are designed for their relief, their reformation, or their moral and physical training. There are upwards of forty orphanages and asylums for fatherless children some few of which are open without restriction, but the majority are for the children of men belonging to special trades, or professions. Among those most recently formed, may be mentioned the *Metropolitan Police Orphanage*, and the *Stockwell Orphanage*, conducted by Mr. Spurgeon, of the Metropolitan Tabernacle. The *Adult Orphan Institution*, founded in 1820, deserves special mention, as it provides for the daughters of clergymen and naval and military officers at an age when they would be unable to remain in other institutions, and trains them for work as governesses. Our space will not permit us to give a detailed list of the homes, refuges, ragged schools and reformatories which have been established of late years ; suffice it to say that they are to be found in every part of London, and that, as a rule, they are admirably conducted. The great army of shoeblacks, scavengers, and rag-collectors, gathered together by the Ragged School Shoeblack Society, and its kindred associations, is a direct evidence of what can be effected by earnest effort, at a comparatively small outlay, for the amelioration of the condition of those who without such agencies would too often add to the already heavy list of our criminal population. The system adopted by the promoters of the society is as simple as it is thoroughly satisfactory in its working, and serves not only to generate habits of industry and forethought, but also relieves the boys from any consciousness that they are dependent upon others. They are required to give up the whole amount earned during the day, which is applied as follows :—6*d.* is returned to the boy as his allowance, and one-third of the remainder ; one-third is retained by the society for expenses ; the balance is reserved as a bank for the boy's benefit. The following is a list of the London shoeblack societies, with the date of the establishment of each, the number of boys employed, and the amount of their earnings during the past year :—

Name of Society.	When established.	Colour of Uniform.	Number of boys employed.	Earned in 1870.	In Bank at Christmas 1870.	Address of Office.
				£ s.	£ s.	
Central	1851	Red	92	3,152 16	484 1	12, Mac's Place, Fetter Lane.
E. London....	1854	Blue	60	1,380 18	41 3	96, Mansell-street, Whitechapel.
S. London	1854	Red, and Black Collar	37	960 18	66 5	221, High-street, Borough.
N. Western ..	1857	Red, and Black Facings	50	1,433 0	37 14	241, Marylebone-road.
W. London ..	1857	Purple ..	50	990 19	163 12	Benbow-place, Pimlico.
Islington and N. London	1857	Brown and Red	42	1,642 0	51 4	15, York-road, King's-cross.
Union Jack ..	1858	Blue, White Facings.	17	368 1	20 9	Three Colt-street, Limehouse.
Notting Hill ..	1869	Blue	20	268 7	10 0	Shaftesbury-hall, Princes-road.
			368	10,196 19.	874 8	

Such a statement as this is highly satisfactory and creditable to the boys and their patrons, giving an average of 27*l.* 13*s.*, or more than 10*s.* per week as the earnings of each boy. The young workers are chosen according to merit from the schools conducted by the Ragged School Union so inseparably associated with the name of Lord Shaftesbury, and it may be interesting to state that the average attendance at the day schools in 1870 was 22,883, and at the night schools 8,748. A visit to one of the centres where the boys congregate after their days' work can scarcely fail to prove instructive to persons who are unacquainted with the manners and customs of our Street Arabs, while the results attained furnish a very clear proof that the truest philanthropy is that which teaches people how to help themselves. Another large group of homes are those which provide a night's lodging and food to applicants, actual want being the only condition of admission. Such is the *House of Charity* in Soho, an institution under the direct superintendence of the clergy of the parish, but open to all wayfarers. The previous histories of the unfortunate inmates furnish some touching glimpses of the misery existing under the surface of society, for many of the poor creatures who thus gladly accept accommodation have by slow but sure steps sunk down from comparative affluence to their present melancholy position, and professional men and their children are frequently found among them. It is, of course, in the winter months that the houses are most crowded, indeed during severe weather the provision is utterly insufficient for the houseless and homeless wanderers. There are upwards of 70 homes and reformatories in London. For

very young children the Crèche or infant nursery is now to be found in several places, and at St. Alban's, Holborn, Quebec Chapel, and St. Andrew's, Wells Street, the little ones are gathered in and cared for, while their mothers are at work. There is a similar establishment in connection with the Roman church at 16, Beaumont Street, Marylebone.

Charity Organization, and the Repression of Mendicity.

The relief of distress at the homes of the people is a special and from some points of view a more interesting form of public benevolence than that which we have hitherto been considering. The distinction lies in the fact that in such cases the voluntary worker is generally the almoner, while in almost all institutions for the reception of the sick or suffering, the officials are necessarily paid. The Roman Church has always included in its machinery a large body of sisters of charity, who have tended the poor at their own homes, and among English Churchmen and Nonconformists the same work has been done in an admirable manner by district visitors and other lay helpers. Of late years, however, several distinct associations, pledging themselves to seek out the sick and afflicted and to supply visitors in parishes where the ordinary residents are unable to cope with the wants of the population have been instituted, foremost among which stand the *Metropolitan Visiting and Relief Association*, formed in 1843, and the *Society for the Relief of Distress*, established in 1860. The funds in both cases are distributed without any reference to creed, and every subscription paid into the latter fund is devoted to the relief of the poor, the management of the institution being undertaken by honorary officials. A glance at the report of the Society shows that its last year's income of 3,153*l.* was distributed in equal proportions in each district of the Metropolis, including those south of the Thames. While, however, the relief of distress has furnished and always must furnish work for all who are willing to serve under the Red Cross at home, there can be little question that in many cases, notwithstanding the care taken by the almoners and the supervision exercised by the ministers of religion, imposition and fraud are practised, and the worthless and profligate in addition to those who are more properly objects for parochial relief under the Poor Law, obtain the aid which belongs to others. To organise charity then, so as to prevent the same ground being worked by different agencies and to repress mendicity, which not unfrequently becomes a pleasant profession to the idle and the reprobate, is as distinctly a duty as the relief of distress, and for this purpose two very important associations are actively engaged. The oldest of the two bodies the *Society for the Suppression of Mendicity*, established in 1818, prosecutes impostors and relieves cases of ascertained distress, but the impossibility of doing the work that has to be done without a series of local organisations induced some practical philanthropists to form another institution

on a more extended basis, which under the title of *The Society for Organising Charitable Relief and Repressing Mendicity*, has been at work since the year 1869. Its great object is to assist, and, if needful, to compel the Poor Law Officer in every parish to do his duty, and to form a medium through which cases of all kinds of distress may be handed over to associations whose province it is to relieve them. Its method of working cannot be better described than by the following extract from Low's Handbook:—"A Charity Office is intended to be established, where practicable, near to each Poor Law Relieving Office throughout the metropolis, under the management of the Committee of Charity of each parish or district; and a charity agent will be appointed, who will be in direct communication with the relieving officer, the local charities, the police, the clergy and ministers, and the district visitors. Every case, on presentation of a ticket, will be carefully inquired into, and referred to the appropriate channels of relief, or otherwise properly dealt with. Confirmed beggars and vagrants will be sent to the Poor Law guardians, or prosecuted before the magistrate as circumstances demand. The charity agent will thus be to his committee what the Poor Law relieving officer is to the board of guardians, and will be specially charged to compile and keep up such a register of cases relieved by the several charities as devised by this Society, and recommended by the Poor Law Minute of 20th November, 1869; the register to be accessible to all persons interested in the efficient relief of the poor, whether through legal or voluntary agencies. Local offices have already been opened in the following districts:—

Kensington	Office,	39, Holland Street, W.
Paddington	,,	3, Leinster Street, W.
Chelsea	,,	5, Blacklands Terrace, King's Road, S.W.
St. George's (Hanover Square)	,,	28, Mount Street, Grosvenor Square, W.
	,,	38, James Street, Westminster, S.W.
Westminster (St. James's) ..	,,	27, Great Pulteney Street, W.
St. Marylebone..	,,	151, Marylebone Road, N.W.
Hampstead	,,	Corner of Church Lane, High Street, N.W.
Kilburn	,,	21, Pembroke Road, N.W.
St. Pancras, North	,,	120, Highgate Road, N.
St. Pancras, South	,,	17, Woburn Buildings, Euston Road, W.C.
Islington	,,	4a, Park Street, Upper Street, N.
St. Giles and Bloomsbury ..	,,	7, Arthur Street, W.C.
Strand	,,	13, Beaufort Buildings, Strand, W.C.
Bethnal Green	,,	337, Bethnal Green Road, N.E.
St. Saviour's, St. Olave's Southwark ..	,,	Montague Street, Borough Road, S.E.
Newington	,,	Vestry Hall, Walworth Road, S.E.
Lambeth	,,	49, Upper Kennington Lane, S.E.
Clapham	,,	11, Polygon, S.W.
Greenwich	,,	14, Haddington Terrace, King Street.
Lewisham	,,	Lee Bridge, Lewisham. 1, South Vale Terrace, Blackheath. Church Row, Eltham.
Sydenham	,,	The Dispensary, Forest Hill, S.E.
Inquiry Committee for East London	,,	139, Belgrave Street, Stepney, E.

The objects of the Association are thoroughly commendable, but everything must depend upon the manner in which the dis-

trict agents do their work. They must be of a totally different type to the official of the Poor Law, who is regarded with little short of horror by the poor, and such men, willing to undertake the work, are hard to find. When, however, they are found there seems little doubt that the plan will prove successful, and that the charity police, as they may be termed, will form a useful addition to our local and national machinery, although at the same time it must be admitted that a large portion of the work which at present devolves upon them ought to be performed by the Poor Law officers, and paid for from local rates, which if properly administered are more than sufficient to provide for the wants of all who are really deserving of aid. The real need of such a society was well explained by the Earl of Derby at the conference held in March last at Willis's Rooms, when he said:—"We, its promoters, believe that there is in London both charity enough and wealth enough to put an end to all undeserved distress if only we could get it applied in the right place. But the difficulty is in that application. People are willing enough to give—whatever may be our national faults parsimony is not one of them—but they like to give in their own way; they are not easily persuaded that their way is not the best, and so, instead of the harmony which ought to exist when good men are working for the same end, you have something like what is popularly called a Dutch concert—everybody playing his own tune on his own instrument; or, if I may use a more dignified simile—charity in London is apt to fall as rain falls in a tropical country, where no expedients have been used to catch it and apply it for irrigating purposes; at one season there is a drought, at another season a deluge, and the excessive supply in the latter case is as mischievous as the deficient supply in the former. I will not go into figures which may be disputed, and with regard to which absolute certainty is unattainable; for my own part, I am convinced that the majority of calculations which have been made rather underrate than overrate the amount which is given away in London in the course of the year, but this much I will venture to affirm, that fully enough is given effectually to supplement the action of the Poor Law if you could only get it directed into the right channel. But much of it is not so directed now, and thus it happens that you have, on the one hand, those painful cases of people—generally such as have known better days—dying of actual starvation, while by their side you have, fat and flourishing, and I am afraid, rather increasing than diminishing in numbers, a tribe of rascally impostors who will do anything but work, and who get what is in many cases a very comfortable living out of the good nature and credulity, and sometimes out of the fears, of the public.

Facts, as detailed in the reports prove the truth of his Lordship's assertions:—

In Clapham, last year, there were investigated 542 cases of residents in the district. Of these 111 were judged to be either impostors or undeserving, 139 were helped with loans

or gifts, as suited their requirements; 292 appeared to be cases suitable to be dealt with by the Poor Law, and were accordingly recommended to the guardians. In Paddington, with a population of 109,000 in the parish, there were 1,320 applicants whose claims were gone into. Of these 268 were proved to be undeserving or not in want, 368 were helped with loans or gifts, 172 were referred either to the guardians or to special charities intended to meet such cases as theirs, and 400, being non-residents, were referred to their own districts. In Marylebone the applications were 1,897, of which 662 were assisted, 599 appeared to be cases for parochial relief, 416 were condemned as undeserving, and 104 were found to have given false addresses. Thus, the cases of imposture, or something like it, amounted in Clapham to 20 per cent. on the applications, in Paddington to 20 per cent., and in Marylebone, if false addresses are taken to be evidence of deception, which they almost necessarily are, to upwards of 27 per cent.

Such figures as these prove emphatically the need which exists for an association with ramifications in every district, and as at its central office it provides information on almost every point connected with metropolitan charity, its promoters are fairly entitled to the thanks of the public for their energetic labours which have already borne good fruit.

Into the remaining portion of this important subject our space will not enable us to enter. The vast array of religious societies, educational institutions, and book societies require separate consideration, but the result of a careful survey of the whole can scarcely fail to convince an unprejudiced person that in numerous instances the work is done twice, and occasionally three times. In more than one instance that could be pointed out, societies exist without absolute benefit to any persons concerned except the officials, and thus the sum expended on the machinery is wasted, and might with advantage be transferred to societies doing kindred work. In one notorious case, which has been more than once publicly alluded to, a society formed for the distribution of books and tracts has existed for two or three years and has carried on what has virtually amounted to a publishing business at an annual loss with no benefit to any one but the authors and clerks. Such a proceeding is of course utterly without excuse, but it is, we fear only one among several glaring examples which could be brought forward, all tending to prove the necessity for some public audit of accounts, and some method of preventing the useless multiplication of organisations. When it is remembered that the gross annual income of the charities of London is not less than three and a half millions sterling, and that at the same time want, misery, and ignorance still exist to an extent which alarms statesmen and philanthropists, we have abundant cause for suggesting that reform is needful, and that the subject is well worthy of investigation. How any satisfactory remedy for the existing waste of money, and energy is to be applied, it is difficult to say, but one very useful course would be to hold a

conference at which the working of every society should be analysed, its office expenses as compared with its income carefully calculated, and the benefits conferred in return for the annual outlay estimated. Recommendations based on the facts then collected might be embodied in a report, and if it were signed by men in whom the public has confidence, it could scarcely fail to exercise a salutary effect, even if it did not furnish a basis for legislation. In addition to this an appeal should be made to the committees of all those societies and charities which are found to be superfluous or useless to suspend their operations, and to invite their subscribers to lend their aid to some other funds doing the same work. That strenuous opposition would be raised to such a course cannot be doubted, but it would emanate chiefly from those whose personal interests would be injured by the abolition of the societies, and would, therefore, be estimated at its true value. At any rate the publication of a fair and and unbiased opinion on the subject would serve to check the formation of new societies, and this in itself would be desirable. Pending the adoption of any such course of action the subscribers to our metropolitan charities must judge for themselves as to the propriety of giving or withholding their support, but we would urge upon them in all cases to remember that injudicious almsgiving is one of the most serious evils at the present day ; and more especially we would warn them against aiding in the promotion of new funds which has become quite as much a trade as the formation of bubble companies, only that in the former case, the secretary, who is generally the prominent mover in the undertaking, seldom fails to make some capital out of his exertions, even if the avowed object of the society is never realized. If public men would sternly refuse to patronize such projects until they are convinced of their utility, much good would be effected ; and we trust that the increased attention devoted to the subject may be accepted as a proof that the day of such abuses as we have mentioned has nearly passed away. There is enough real misery in the world without the creation of imaginary evils for the benefit of interested persons, and the sooner the public realize this fact the better.

To enable the reader to form a fair judgment on the matter the above survey of the existing state of the charities may be of some service, and we recommend all who are inclined to study the subject carefully to weigh the evidence in "Low's Handbook," which is furnished by the secretaries, and may, therefore, be relied upon.

CHARLES MACKESON.

TABLE OF ALL THE PUBLIC GENERAL ACTS

PASSED IN THE THIRD SESSION OF THE TWENTIETH PARLIAMENT OF GREAT BRITAIN AND IRELAND,

34 AND 35 VICTORIÆ.

(The Acts are given in the order in which they were passed, the number denoting the chapter. An Abstract of those Acts distinguished by an asterisk is given in the pages following this table, which contain a classified epitome of the more important statutes passed during the year.)

I. An Act to enable Her Majesty to settle an Annuity on Her Royal Highness the Princess Louise Caroline Alberta.

II. An Act to repeal Section Twenty-two of "The Juries Act, 1870."

(Repeals section 22 of 33 & 34 Vict. c. 77; Payment of Jurors.)

III. An Act to empower Committees on Bills confirming or giving effect to Provisional Orders to award costs, and examine witnesses on oath.

(Repeals 33 and 34 Vict. c. 1; Provisional Order Bills.)

*IV. An Act to amend "The Stamp Act, 1870," in relation to Foreign Securities, Mortgages of Stock, and Proxy Papers.

(Repeals sections 113, 114, of 33 & 34 Vict. c. 97; Inland Revenue Stamps.)

V. An Act to make provision for the Assessment of Income Tax.

(Applies existing Acts relating to Income Tax.)

VI. An Act to apply £462,580, out of the Consolidated Fund to the service of the years ending the 31st of March, 1870 and 1871.

VII. An Act to apply £5,411,900 out of the Consolidated Fund to the service of the year ending 31st of March, 1872.

VIII. An Act for extending the Jurisdiction of the Courts of the West African Settlements to certain Offences committed out of Her Majesty's Dominions.

IX. An Act for punishing Mutiny and Desertion, and for the better payment of the Army and their Quarters.

(Applies 26 & 27 Vict. c. 57; Regimental Debts.
Repeals sections 9, 10 of 30 & 31 Vict. c. 34; Army Enlistment.)

X. An Act for the Regulation of Her Majesty's Royal Marine Forces while on shore.

*XI. An Act to make further provision in reference to Loans obtained under the Poor Law Acts.

(Applies 4 & 5 Will. 4, c. 76 } Poor Law Amendment.
„ 31 & 32 Vict. c 122 }
„ 32 & 33 Vict. c. 45; Union Loans.

*XII. An Act to further amend the Law relating to Fairs in England and Wales.

*XIII. An Act to facilitate Gifts of Land for Public Parks, Schools, and Museums.

(Exempts Gifts and Bequests of Land or Money from the operation of the Mortmain Acts 9 Geo 2, c. 36, &c.)

XIV. An Act to provide for the vesting of County Property in the Clerk of the Peace for the County.

(Amends and applies 21 & 22 Vict. c. 92; County Property Conveyance.

As to purchase of lands under 16 & 17 Vict. c. 97: Lunatic Asylums.)

XV. An Act to amend the Metropolitan Poor Act, 1867.

(Amends and applies 30 & 31 Vict, c. 6; Metropolitan Poor.)

XVI. An Act to amend the Law for regulating Schools of Anatomy.

(Amends 2 & 3 Will. 4, c. 75; Schools of Anatomy.)

*XVII. An Act to make provision for Bank Holidays, and respecting obligations to make payments and do other acts on such Bank Holidays.

*XVIII. An Act to amend the Law disqualifying Attorneys, Solicitors, and Proctors in practice from being Justices of the Peace for counties.

(Repeals section 33 of 6 & 7 Vict. c. 73; Attorneys and Solicitors.

Repeals section 2 of 5 Geo. 2, c. 18; Justices of Peace.)

*XIX. An Act for exempting persons professing the Jewish religion from penalties in respect of young persons and females professing the said religion working on Sundays.

(Amends 30 & 31 Vict. c. 146, as to penalties incurred by Jews for working on Sunday.)

XX. An Act to apply the sum of £7,000,000 out of the Consolidated Fund to the service of the year ending the 31st of March, 1872.

XXI. An Act to grant Duties of Customs and Income Tax.

(Continues Customs Duties on Tea.

Applies existing Acts relating to Income Tax.)

XXII. An Act to amend the Law in Ireland relating to Commissions of Lunacy, and the proceeding under the same, and the management of the Estates of Lunatics; and to provide for the visiting and the protection of the property of Lunatics in Ireland; and for other purposes.

(Applies 13 & 14 Vict. c. 60; Trustee Act.

Repeals section 3 in part of 15 Car. 1, c. 53 [Irish Parl.?]

„ 6 Geo. 4, c. 53; Inquisitions of Lunacy.

„ 1 Will. 4, c. 65, in part; } Property of

„ 5 & 6 Will. 4, c. 17; } Lunatics,

„ sections 1, 2, 3, of 15 and 16 Vict. c. 48; } &c.)

XXIII. An Act for re-vesting in Her Majesty, her heirs and successors, the Rectory of Newelme alias Ewelme, in the county of Oxford.

(Amends 10 Anne, c. 45 (Record Edition); Regius Professorship of Oxford.)

XXIV. An Act for regulating the management by the Trustees of the Presbyterian Church in Ireland of certain trust properties for the said Church, and for other purposes.

(Recites 32 & 33 Vict. c. 42; Irish Church.)

XXV. An Act to empower the Lord Lieutenant or other Chief Governor or Governors of Ireland to apprehend and detain for a limited time persons suspected of being members of the Ribbon Society, or of being concerned in the commission of any crime or outrage under the direction or influence of the said Ribbon Society in the county of Westmeath, or in certain adjoining portions of the

county of Meath and the King's County; and to continue "The Peace Preservation (Ireland) Act, 1870."

(Continues and amends 33 & 34 Vict. c. 9; Peace Preservation.)

*XXVI. An Act to alter the law respecting Religious Tests in the Universities of Oxford, Cambridge, and Durham, and in the Halls and Colleges of those Universities.

(Repeals in part 14 Car. 2, c. 4 (Record Edition); Uniformity.
" " 1 Geo. 1, pt. 2 c. 13; Succession of the Crown.
" " 31 Geo. 2, c. 32; } Roman Catholic Disabilities.
" " 10 Geo. 4, c. 7; }
" " 19 & 20 Vict., c. 88; Cambridge University.

XXVII. An Act to remove doubts as to the power of Trustees to invest Trust Funds in Debenture Stocks.

(Recites 26 & 27 Vict., c. 118; Companies Act, 1863.)

XXVIII. An Act respecting the establishment of Provinces in the Dominion of Canada.

*XXIX. An Act to facilitate the Payment of Dividends on India Stocks.

(Amends 33 & 34 Vict., c. 71; National Debt.)

*XXX. An Act for the further regulation of the Duties on Postage.

(Repeals in part 3 & 4 Vict., c. 96; Postage Duties.
" " 33 & 34 Vict., c. 79; Post Office.)
(Applies 3 & 4 Vict., c. 96; }
" 10 & 11 Vict., c. 85; } Post Office.)
" 33 & 34 Vict. c. 79; }

*XXXI. An Act to amend the law relating to Trades Unions.

(Repeals 32 & 33 Vict., c. 61; Trades Union Funds Protection.
Applies the Summary Jurisdiction Acts.)

*XXXII. An Act to amend the Criminal Law relating to Violence, Threats, and Molestation.

(Repeals 6 Geo. 4, c. 129 } Combination of Workmen.
" 22 Vict. c. 34; }
" section 41 of 24 & 25 Vict., c. 100; Offences against the person.
Applies the Summary Jurisdiction Acts.)

XXXIII. An Act to explain and amend the Burial Acts.

(Amends and explains 20 & 21 Vict., c. 81; } Burial Acts.)
" " 23 & 24 Vict., c. 64; }

XXXIV. An Act to extend in certain respects the power of Local Legislatures in India as regards European British subjects.

(Extends powers of 24 & 25 Vict. c. 67; East India Councils.)

XXXV. An Act to transfer to the Commissioners of Her Majesty's Works and Public Buildings the property in and control over the buildings and property of the Police Courts of the Metropolis, and for other purposes relating thereto.

(Repeals in part section 16 of 10 Geo. 4, c. 44; }
" " section 7 of 2 & 3 Vict., c. 71; } Police (Metropolis.)
" " section 5 of 24 & 25 Vict., c. 124; }
Applies 14 & 15 Vict., c. 42; Public Works Land Clauses Act, 1845.)

XXXVI. An Act to extend the provisions of the Pension Commutation Acts, 1869 and 1870, to certain Public Civil Officers, and to consolidate and amend the said Acts.

(Repeals 32 & 33 Vict. c. 32; }
" 33 & 34 Vict., c. 101; } Pensions Commutations.)

XXXVII. An Act to amend the law relating to the Tables of Lessons and Psalter contained in the Prayer Book.

XXXVIII. An Act for amending the Public Health (Scotland) Act, 1867.

(Amends and repeals in part 30 & 31 Vict., c. 101.)

XXXIX. An Act to amend the Metropolitan Building Act, 1855, by adding to the exemptions from Part I of the Act the Buildings of the New Foreign Cattle Market on the site of Deptford Dock.

(Recites 32 & 33 Vict., c. 70; Contagious Diseases (Animals).
Amends 18 & 19 Vict., c. 122; Metropolitan Buildings.)

XL. An Act to alter and regulate the Proceedings and Powers of the Primitive Wesleyan Methodist Society of Ireland, and for other purposes.

XLI. An Act to amend the Gasworks Clauses Act, 1847.

(Amends 10 & 11 Vict., c. 15.
Applies Lands Clauses Act, 1845 and 1860.)

XLII. An Act to amend the Process of Citation in Scotland.

(Amends Acts of James 5, 1540, c. 75; Citations (Scotland)).

*XLIII. An Act for the amendment of the law relating to Ecclesiastical Dilapidations.

(Applies 17 Geo. 3, c. 53; 21 Geo. 3, c. 66; 7 Geo. 4, c. 66; 1 & 2 Vict. c. 23; 1 & 2 Vict. c. 106; 28 & 29 Vict. c. 69; } Benefices; Queen Anne's Bounty, &c.)

*XLIV. An Act to enable Clergymen permanently incapacitated by illness to resign their Benefices with provision of Pensions.

(Exempts from penalties under 31 Eliz. c. 6, and 12 Anne, st. 2, c. 12, &c.
Applies 1 & 2 Vict. c. 106; Benefices.)

*XLV. An Act for amending the law relating to Sequestration of Ecclesiastical Benefices.

(Applies 1 & 2 Vict. c. 106; Benefices.)

XLVI. An Act for amending the law relating to the appointment of the Gaoler, Chaplain, and Matron of the prison of the city of Bath.

(Amends 28 & 29 Vict. c. 126; Prisons Act, 1865.)

XLVII. An Act for amending the Acts regulating the borrowing of Money by the Metropolitan Board of Works; and for other purposes relating thereto.

(Amends and applies 32 & 33 Vict. c. 102; 33 & 34 Vict. c. 24; } Metropolitan Board of Works.
Amends 18 & 19 Vict., c. 120; Metropolis Management.
Applies Section 3 of 33 & 34 Vict., c. 93; Married Women's Property Act, 1870.)

XLVIII. An Act to repeal divers enactments relating to Oaths and Declarations which are not in force; and for other purposes connected therewith.

(Recites 29 & 30 Vict. c. 22; Qualification of Offices Abolition.
Amends 31 & 32 Vict. c. 72; Promissory Oaths.
Repeals various Acts relating to Oaths and the Annual Indemnity Acts.)

XLIX. An Act to amend "The Matrimonial Causes and Marriage Law (Ireland) Amendment Act, 1870."

(Amends 33 & 34 Vict. c. 110.
" section 13 of 7 & 8 Vict. c. 81, as to Marriages of Jews.
Makes provisions as to licenses for Roman Catholic and for Mixed Marriages.)

*L. An Act for disqualifying Bankrupts from sitting or voting in the House of Lords.

LI. An Act to apply the sum of £10,000,000 out of the Consolidated Fund to the service of the year ending the 31st of March, 1872.

LII. An Act for raising the sum of £700,000 by Exchequer Bonds for the service of the year ending the 31st of March, 1872.

*LIII. An Act to repeal an Act for preventing the assumption of certain Ecclesiastical Titles in respect of places in the United Kingdom.

(Repeals 14 & 15 Vict. c. 60.)

LIV. An Act to settle a Boundary within which a vote may be taken for the adoption of "The Local Government Act" by the district of Kingsholm in the county of Gloucester.

(Applies 21 & 22 Vict. c. 98; Local Government.)

LV. An Act to amend the law relating to Criminal and Dangerous Lunatics in Scotland.

(Amends 20 & 21 Vict. c. 71 } Lunacy (Scotland)).
" 25 & 26 Vict. c. 54 }

*LVI. An Act to provide further Protection against Dogs.

(Saves section 18 of 30 & 31 Vict. c. 134; Metropolitan Streets.
Applies Summary Jurisdiction and Procedure Acts.)

LVII. An Act to enable the Commissioners of Her Majesty's Works and Public Buildings to acquire additional Lands for improving the site of the Courts of Justice and the various Offices belonging to the same.

(Applies 28 & 29 Vict. c. 49; Courts of Justice (Concentration)).

*LVIII. An Act to amend "The Life Assurance Companies' Act, 1870."

(Amends and applies 33 & 34 Vict. c. 61; Life Assurance Companies.)

LIX. An Act to amend "The Public Libraries (Scotland) Act, 1867," and to give additional facilities to the Local Authorities entrusted with carrying the same into execution.

(Amends and repeals in part 30 & 31 Vict. c. 37.
Applies Commissioners' Clauses Act, 1847.)

LX. An Act to amend "The Public Schools Act, 1868."

(Amends 31 & 32 Vict. c. 118.)

LXI. An Act to amend "The Corrupt Practices Commission Expenses Act, 1869."

(Amends 32 & 33 Vict. c. 21; Corrupt Practices Commission Expenses.)

LXII. An Act to enable Her Majesty to make regulations relative to the leave of absence of Indian Bishops on furlough and medical certificates.

(Amends 5 & 6 Vict. c. 119; East India Bishops.)

LXIII. An Act to amend the law respecting the granting of Charters for new college or university.

LXIV. An Act to enable Her Majesty to provide for the Support

and Maintenance of His Royal Highness Prince Arthur William Patrick Albert on his coming of age.

LXV. An Act to amend and consolidate the laws relating to Juries in Ireland.

(Repeals 40 Geo. 3, cap. 72 (I) except s. 7; 3 & 4 Will. 4, c. 91, exc. ss. 47, 50; 4 & 5 Will. 4, c. 8; 2 & 3 Vict. c. 48; Jurors and Juries (Ireland)

„ 179 in part of 3 & 4 Vict. cap. 108; Municipal Corporations (Ireland.)

„ 8 & 9 Vict. c. 67; Jurors Books (Ireland.)

„ s. 87 of 12 & 13 Vict. c. 91; Collection of Rates (Dublin.)

„ ss. 109–117 of 16 & 17 Vict. c. 113; Common Law Procedure (Ireland.)

„ s. 4 of 31 & 32 Vict. c. 75; Petit Juries (Ireland.)

Applies the Fines (Ireland) Act, 1851.)

*LXVI. An Act to amend and define the law relating to private Chapels, and to Chapels belonging to Colleges, Schools, Hospitals, Asylums, and other public institutions.

LXVII. An Act to amend "The Municipal Corporation Act of 1859," with respect to the division of Boroughs into Wards.

(Amends 22 Vict. c. 35; Municipal Elections.)

LXVIII. An Act to determine the Boundaries of the Barony and Regality of Glasgow for purposes of Registration.

(Recites 31 & 32 Vict. c. 64; (Land Registers, Scotland) and removes doubts respecting the Boundaries of Glasgow.

LXIX. An Act to enable the Board of Trade to dispense with certain provisions of "The Tramways Act, 1870," in respect of certain Provisional Orders.

*LXX. An Act for constituting a Local Government Board, and vesting therein certain functions of the Secretary of State and Privy Council concerning the Public Health and Local Government, together with the powers and duties of the Poor Law Board.

*LXXI. An Act to amend "The Public Libraries Act, 1855."

(Amends and extends 18 & 19 Vict. c. 70.))

LXXII. An Act for the further protection of Purchasers against Crown Debts, and for amending the laws relating to the office of the Registrar of Judgments and other offices of the Court of Chancery, Ireland.

(Repeals in part 7 & 8 Vict. c. 90; Protection of Purchasers (Ireland,)

„ „ 11 & 12 Vict. c. 120; Transfer of Landed Property (Ireland.)

Applies 13 & 14 Vict. c. 74: Registrar of Judgments' Office (Ireland.)

„ 13 & 14 Vict. c. 72; Registry of Deeds (Ireland.)

„ 33 & 31 Vict. c. 70; Public Records (Ireland.)

LXXIII. An Act for making Regulations as to the office of Clerk of the Peace for the County Palatine of Lancaster.

LXXIV. An Act to abolish Days of Grace in the case of Bills of Exchange and Promissory Notes payable at Sight or on Presentation.

LXXV. An Act for enabling a further sum to be raised for the purposes of "The Telegraph Acts, 1868 to 1870."

(Applies 31 & 32 Vict. c. 110; 32 & 33 Vict. c. 73; 33 & 34 Vict. c. 88; } Telegraph Acts.)

LXXVI. An Act to amend the law relating to the Recovery of Small Debts and to Summary Jurisdiction in Ireland.

(Amends 22 Vict. c. 14; Manor Courts (Ireland.)
„ Laws relating to certain offences within Police District of Dublin Metropolis.
Applies Summary Jurisdiction (Ireland) Act, 1851, as to recovery of Small Tenements.)

LXXVII. An Act to disfranchise certain Voters for the City of Norwich.

LXXVIII. An Act to amend the law respecting the Inspection and Regulation of Railways.

(Amends and repeals in part 3 & 4 Vict. c. 97; 5 & 6 Vict. c. 55; } Regulation of Railways.
„ „ 7 & 8 Vict. c. 85; Construction of Railways.
„ 31 & 32 Vict. c. 119; Regulation of Railways.
Applies 10 & 11 Vict. c. 82; Juvenile Offenders.
„ 13 & 14 Vict. c. 37; Larceny.
„ 24 & 25 Vict. c. 100; Offences against the Person.
„ Railway Clauses Consolidation Acts, 1845.)

*LXXIX. An Act to protect the Goods of Lodgers against Distresses for Rent due to the Superior Landlord.

*LXXX. An Act to explain and amend the law relating to Industrial and Provident Societies.

(Amends 30 & 31 Vict. c. 117.)

LXXXI. An Act to abolish Reductions ex capite lecti in Scotland.

LXXXII. "Church Building Acts Amendment Act, 1871."

(Amends 8 & 9 Vict. c. 70, and 14 & 15 Vict. c. 97; as to Assignment of Consolidated Chapelry Districts.)

LXXXIII. An Act for enabling the House of Commons and any Committee thereof to administer Oaths to Witnesses.

(Repeals s. 1 of 21 & 22 Vict. c. 78; Administration of Oaths by Committees.
„ s. 3 of 34 & 35 Vict. c. 3; Provisional Orders Bill; Committees.)

LXXXIV. An Act to amend "The Limited Owners Residences Act, 1870."

(Repeals ss. 3 & 6 of 33 & 34 Vict. c. 56.)

LXXXV. An Act to make further provision respecting the opening and working of Mines end Quarries in Her Majesty's Forest of Dean, and in the hundred of Saint Briavels, in the county of Gloucester; and for other purposes connected therewith.

(Amends 1 & 2 Vict. c. 43; 24 & 25 Vict. c. 40; } Dean Forest.
„ 59 Geo. 3. c. 86; Recovery of Gale Rents in Dean Forest.

*LXXXVI. An Act for the better Regulation of the Regular and Auxiliary Land Forces of the Crown; and for other purposes relating thereto.

(Applies Mutiny Act to Volunteers when in training.)

LXXXVII. An Act to amend the law with respect to Prosecutions

for Offences against the Act of the twenty-ninth year of the reign of King Charles the Second, chapter seven, intituled "An Act for the better observation of the Lord's Day, commonly called Sunday."

(Amends 29 car. 2. c. 7; Lord's Day Observance.)

*LXXXVIII. An Act to restrict during a limited time the grant by Justices of the Peace of new Licenses and Certificates for the Sale of Intoxicating Liquors by Retail; and for other purposes.

(Amends and restricts Issue of New Licenses under:
9 Geo. 4, c. 61; Intoxicating Liquors (Licensing.)
32 & 33 Vict. c. 27; } Wine and Beerhouse.
33 & 34 Vict. c. 29; }
25 Geo. 2, c. 36; Music and Dancing Licenses.)

LXXXIX. An Act to apply a sum out of the Consolidated Fund to the service of the year ending the 31st day of March, 1872, and to appropriate the Supplies granted in this Session of Parliament.

XC. An Act to amend the law relating to the Union of Benefices.

(Amends 1 & 2 Vict. c. 106; } Union of Benefices.
„ 13 & 14 Vict. c. 98; }

*XCI. An Act to make further provision for the dispatch of business by the Judicial Committee of the Privy Council.

(Saves 3 & 4 Will. 4, Act 41; Administration of Justice (Privy Council.))

XCII. An Act to amend the Landlord and Tenant (Ireland) Act, 1870.

(Amends 33 & 34 Vict. c. 46.)

XCIII. An Act to amend the Act 12th and 13th Victoria, chapter 81; and to extend the provisions of that Act and "The Metropolitan Commons Act, 1866," so far as regards that part of Waltham Forest known as Epping Forest.

(Amends and extends 12 & 13 Vict. c. 81; New Forest and Waltham Forest.
Extends 29 & 30 Vict. c. 122; Metropolitan Commons.)

XCIV. An Act to amend Paragraph 3, of the 2nd Schedule of "The Elementary Education Act, 1870."

(Amends 33 & 34 Vict. c. 75.)

XCV. An Act to continue various expiring Laws.

(Continues thirty-two Acts from 5 & 6 Will. 4, to 32 & 33 Vict. c. 21. For list of these Acts see *Companion* for 1871, page 222, observing that 17 & 18 Vict. c. 117; Incumbered Estates (West Indies) and 32 & 33 Vict. c. 61; Trades Union Funds are omitted from the present list, and that the following is added:—
32 & 33 Vict. c. 21; Election Commissioners Expenses.)

*XCVI. An Act for granting Certificates to Pedlars.

(Repeals 33 & 34 Vict. c. 72: Pedlars' Certificates.
Applies 10 & 11 Vict. c. 14; Markets and Fairs' Clauses.
„ Summary Jurisdiction and Procedure and Petty Sessions (Ireland) Acts.)

XCVII. An Act for making provision for facilitating the Manœuvres of Troops to be assembled during the ensuing Autumn.

(Applies Military Acts and Articles of War.)

*XCVIII. An Act to amend the Vaccination Act, 1867.

(Amends and repeals in part 30 & 31 Vict. c. 84.)

XCIX. An Act to amend the Procedure in the Civil Bill Courts in Ireland.

(Amends and repeals in part 27 & 28 Vict. c. 99.)

C. An Act to amend "The Glebe Loan (Ireland) Act, 1870."

(Amends 33 & 34 Vict. c. 112.)

CI. An Act to amend the Law respecting the proving and sale of Chain Cables and Anchors.

(Amends and repeals in part 27 & 28 Vict. c. 27.)

CII. An Act to amend the Laws of Charitable Donations and Bequests in Ireland.

(Amends 7 & 8 Vict. c. 97 & 30 & 31 Vict. c. 54.)

CIII. An Act to amend the Law relating to the Customs and Inland Revenue.

(Repeals in part 56 Geo. 3, c. 73; Customs Widows' Fund.
„ „ 16 & 17 Vict. c. 107: } Customs Duties, &c.
„ sections 1, 10, of 18 & 19 Vict. c. 96; }
„ sections 4, 5, of 22 & 23 Vict. c. 37; }
„ in part 23 & 24 Vict. c. 22; }
„ section 4 of 23 & 24 Vict. c. 110; }
„ section 58 of 33 & 34 Vict. c. 97 (stamps) so far as relates to the customs.

Amends 23 & 24 Vict. c. 114, c. 14 & c. 24; } Inland Revenue.
„ 32 & 34 Vict. c. 97; }

Exempts printers' publishers, &c., of newspapers from liability on bonds executed under 60 Geo. 3, c. 9.)

*CIV. An Act to amend the Acts relating to Factories and Workshops.

(Repeals in part 7 & 8 Vict. c. 15; } Factories.
„ section 7 (in part) of 27 & 28 Vict. c. 48; }
„ section 35 (in part) of 11 & 12 Vict. c. 43; Summary Convictions.
„ in part 30 & 31 Vict. c. 146, Workshops.

Applies Factory Acts 1833–1871.
„ Workshop Acts 1867–1871.

*CV. An Act for the safe keeping of Petroleum and other substances of a like nature.

Repeals 25 & 26 Vict. c. 66; } Petroleum.
„ 31 & 32 Vict. c. 56; }
„ sections 8 & 9 of 29 and 30 Vict. c. 69; Dangerous Goods.

Applies Summary Procedure and Jurisdiction Acts.

CVI. An Act to make provision for the separation from Counties in Ireland of detached and isolated portions of Land separated from the same by the Sea, and for the annexation of such Lands to Counties more conveniently situated for parliamentary, grand jury, and other purposes; and also to provide for the presentment of moneys by Grand Juries in certain cases.

CVII. An Act for the Federation and general Government of the Leeward Islands.

*CVIII. An Act to regulate and control the Discharge of Paupers from Workhouses and Wards provided for the Casual Poor.

(Amends 5 & 6 Vict. c. 57: Poor Relief.
Applies 5 Geo. 4, c. 83; Vagrant Act.
„ 4 & 5 Will. 4, c. 76; Poor Relief.
„ 30 & 31 Vict. c. 6; Metropolitan Poor.)

CIX. An Act to amend the Law relating to the Local Government of Towns and populous Places in Ireland.

(Amends and in part repeals 17 & 18 Vict. c. 103; Towns Improvement (Ireland).
Amends 29 & 30 Vict. c. 90; Sanitary Act, 1866.
Applies 10 & 11 Vict. c. 14; Markets and Fairs Clauses.
" Railway Clauses Act, 1845.
" Sanitary Act, 1868, and Sanitary Loans Act, 1869.)

*CX. An Act to amend the Merchant Shipping Acts.

(Amends and in part repeals 17 & 18 Vict. c. 104.
" " " 18 & 19 Vict. c. 91.)

CXI. An Act to amend "The Beerhouses (Ireland) Act, 1864," and for other purposes relating thereto.

(Amends 27 & 28 Vict. c. 35; Sale of Beer (Ireland).)
Repeals s. 2 of 6 Geo. 4. c. 81 and s. 6 of 13 & 14 Vict. c. 67, as to Brewers' Licenses.

*CXII. An Act for the more effectual Prevention of Crime.

(Repeals 32 & 33 Vict. c. 99; Habitual Criminals.
" section 4 (in part) of 27 & 28 Vict. c. 47; Penal Servitude.
Amends 5 Geo. 4, c. 83; Vagrant Act.
Applies 24 & 25 Vict. c. 96; Vagrant Consolidation.
" Industrial Schools Acts 1866 and 1868.
" Summary Jurisdiction and Procedure Acts.
" Fines (Ireland) and Petty Sessions (Ireland) Acts.)

*CXIII. An Act to amend "The Metropolis Water Act, 1852;" and to make further provision for the due Supply of Water to the Metropolis and certain places in the neighbourhood thereof.

(Amends and repeals (in part) 15 & 16 Vict. c. 84; Metropolis Water.
Applies 28 & 29 Vict. c. 90; Metropolitan Fire Brigade.

CXIV. An Act to amend the Tramways (Ireland) Acts, 1860 and 1861.

(Amends 23 & 24 Vict. c. 152, and 24 & 25 Vict. c. 102.)

CXV. An Act to continue certain Turnpike Acts in Great Britain, to repeal certain other Turnpike Acts, and to make further provisions concerning Turnpike Roads.

(Repeals 7 Geo. 4, c. 142; } Metropolis Roads north of the Thames.
" 10 Geo. 4, c. 59; }
" 26 & 27 Vict. c. 78; }
" s. 2 of 24 & 25 Vict. c. 28; Holyhead Roads.
" s. 75 of 4, Geo. 4, c. 95; as to Impounding Cattle.)

CXVI. An Act for further promoting the Revision of the Statute Law by repealing certain Enactments which have ceased to be in force or have become unnecessary.

(Repeals upwards of 1,000 Enactments from 46 Edw. 3, to 41 Geo. 3, c. 32; a schedule of which is published by H. M. Printers.)

CXVII. An Act for confirming a Scheme of the Charity Commissioners for the several Charities founded by the Settlement and Will of Christopher Tancred, of Whixley, in the county of York, Esquire, deceased.

(Recites the 18th Report of the Charity Commissioners dated February 27, 1871.)

ABSTRACTS OF IMPORTANT ACTS OF PARLIAMENT

PASSED IN THE THIRD SESSION OF THE TWENTIETH PARLIAMENT OF GREAT BRITAIN AND IRELAND.

I. ARMY AND NAVY.

ARMY REGULATION.

[34 and 35 Victoriæ, cap. 86.—August 17, 1871.]

An Act for the better Regulation of the Regular and Auxiliary Land Forces of the Crown; and for other Purposes relating thereto.

This Act has nineteen clauses, with a preamble reciting that it is expedient to provide for the better regulation of the regular and auxiliary land forces of the Crown, and referring to the abolition of purchase by Royal Warrant. The details as to the compensation to be allowed to officers in respect of their commissions occupy the first five clauses. The sixth clause recites that the jurisdiction of lieutenants of counties or of the Lord Lieutenant of Ireland in relation to the militia, yeomanry, and volunteers is to revert to Her Majesty, and to be exercised through her Secretary of State or any officers to whom the power may be delegated, except that the appointment of deputy lieutenants is still to rest with the lieutenants of counties and the Lord Lieutenant of Ireland, and that the lieutenants of counties are still to exercise their functions in relation to the raising of the militia by ballot. Commissions or first appointments to the rank of cornet, ensign, or lieutenant in the auxiliary forces are to be given to persons recommended by the lieutenant of the county and approved by Her Majesty, if such recommendation is made within thirty days of the declaration of the vacancy by the Secretary of State. Clause 7 provides that the number of the auxiliary forces shall be decided by Parliament from time to time. Clause 8 directs that men enlisted in the militia shall attend for preliminary training on the direction of the Secretary of State for a period of not more than six months. Clause 9 authorises the application of the Mutiny Act to volunteers when in training with militia or regular forces. Clauses 10 to 13 contain further provisions as to compensation to officers on abolition of purchase. Clause 14 recites that returns relative to the militia are to be made to persons authorised by the Secretary of State, and clause 15 transfers to the commanding officer of any regiment of militia or yeomanry the authority to issue orders for their billeting, which are to have the same force as if given by the lieutenant of the county. Clause 16 authorises the Government in times of emergency to take possession of railroads and railway plant for a period of a week, with power to renew the occupation from week to week, the State meanwhile fulfilling the contracts entered into by the company or persons to whom the railroad belongs, and paying compensation for any loss or injury caused during the time of its occupation. Clause 17 extends the provisions of part V of the Volunteer Act of 1863, entitled "Acquisition

of Land for Ranges," and provides for the acquisition of land by all the auxiliary forces for stores, drill sheds, or any other military purposes, militia, yeomanry, and volunteers being all placed on the same footing in this respect.

II. CHURCH AND EDUCATION.

UNIVERSITY TESTS.

[34 and 35 Victoriæ, cap. 26.—June 16, 1871.]

An Act to alter the Law respecting Religious Tests in the Universities of Oxford, Cambridge, and Durham, and in the Halls and Colleges of those Universities.

The preamble of this Act recites that whereas it is desirable to render accessible to the whole nation the benefits of the Universities of Oxford, Cambridge, and Durham, it is expedient to remove, under proper safeguards, the restrictions, tests, and disabilities which at present debar Her Majesty's subjects from the enjoyment of the same. Clause 2 defines the terms used in the Act, and clause 3 enacts that no persons taking lay academic degrees, or holding lay academic, or collegiate offices shall in future be required to subscribe any formulary of faith, but it also recites that nothing in this section shall render a layman or a person not a member of the Church of England eligible for an office hitherto restricted to persons in holy orders, or shall remove the obligation for those who fill such offices to enter holy orders, nor shall it open offices hitherto filled by members of the Church of England to persons not so qualified. Clauses 4 and 5 lay down the relation of the Act to religious instruction in the universities and colleges, enacting that the governing body of any college existing at the time of its passing shall provide sufficient religious instruction for all members *in statu pupillari* belonging to the Established Church, and that morning and evening prayer shall be used as heretofore in the college chapels, except in cases where an abridgment of the offices may be authorised by the visitor on the request of the governing body. Clause 7 relieves any person from attendance at college or university lectures if he, being of age, or his guardians if he is a minor, hold objections to such attendance on religious grounds. This Act repeals several sections of the Act of Uniformity of the Popish Disabilities Act and of the Roman Catholic Emancipation Act.

ECCLESIASTICAL DILAPIDATIONS.

[34 and 35 Victoriæ, cap. 43.—July 13, 1871.]

An Act for the Amendment of the Law relating to Ecclesiastical Dilapidations.

The preamble of this Act recites that "as well for the better sustentation of houses of residence, chancels, and other buildings which incumbents of ecclesiastical benefices and other ecclesiastical persons are by law or custom bound to maintain in repair, as also for the relief of such persons and their representatives, it is expedient to amend the law relating to ecclesiastical dilapidations." Clauses 1 to 7 define the terms mentioned in the Act and provide that although a build-

ing may be situated out of a certain diocese it shall be deemed for the purposes of the Act to be situated within the diocese of the bishop in whose jurisdiction the benefice lies, and it also enacts that during the vacancy of a see, the guardian of the spiritualities of a diocese shall exercise the same power as the bishop. Clause 8 to 11 provide for the appointment of surveyors of dilapidations in each diocese by the archdeacons and rural deans assembled under the presidency of the bishop or senior archdeacon. Such surveyors are to be responsible to the bishop who is authorised to hear complaints against them, and to remove them from office. The surveyors and the bishop's secretary and registrar are to be paid for all work done under the Act according to a fixed table of fees, and it is to be illegal for them to be beneficially interested in any work or contract executed in connection with the Act. Clauses 12 and 13 authorise the bishop to order an inspection of dilapidations to be made on the complaint of an incumbent, archdeacon, rural dean, or patron, the copy of the report to be forwarded within a month to the bishop and the incumbent, or to the sequestrator if the benefice is under sequestration. By clause 16 the incumbent may make objections to the surveyor's recommendations, but the bishop's decision is to be final. To repair the dilapidations the incumbent may borrow from the Governors of Queen Anne's Bounty (Clause 17), who are to keep a dilapidation account for the benefice (Clause 17), and in any case he is to execute the works within the time directed by the bishop (Clause 18). Clause 22 permits the incumbent, on the complaint of the archdeacon or rural dean, to effect the repairs within 21 days, without further proceedings before the bishop, but if he neglects to do so after the final recommendation of the inspector is sanctioned by the bishop his lordship is authorised to obtain the necessary funds to carry out the work by sequestrating the benefice reimbursing himself for all expenses incurred in such proceedings (Clause 23). A vacancy in a benefice is not to affect the method of procedure (Clause 24). Clauses 25 to 28 inclusive, apply the Act to the houses of residence of archbishops, bishops, deans, and canons. Clauses 29 to 43 refer to dilapidations on vacant benefices. On the avoidance of a benefice the surveyor is to report as to dilapidations within three calendar months after the benefice is vacant, and the same course as to objections and final decision is to be pursued as laid down in previous clauses, the cost of repair being defrayed by the late incumbent, and forming a debt from him to the new incumbent, recoverable in a court of law, or in equity. The new incumbent is to pay all moneys received from his predecessor, on account of dilapidations to the Governors of Queen Anne's Bounty, who may advance money to him for repairs on the security of the benefice. Clauses 44 to 53 relate to the execution of the works, and provide that in the case of the refusal of an incumbent to have repairs executed, or when a benefice is sequestrated, the surveyor may employ builders to carry them out, by order of the bishop. No further repairs are to be required from an incumbent for five years, nor is any inspection necessary during that period, unless a benefice becomes vacant, in which case the incumbent, or his representatives shall only be liable for wilful waste. Clause 54 enacts that an incumbent shall insure all buildings on his benefice and the chancel of the church, if he is liable for its repair, to the extent of at least three-fifths of the value, in an office or offices approved by the Governors of Queen

Anne's Bounty, the receipts for the premium to be exhibited to the archdeacon at his first visitation after it becomes payable, and a declaration that the payment has been kept up is to be made annually by the incumbent. Buildings not insured if destroyed by fire are to be restored by the incumbent, or if the living be sequestrated the cost of the restoration is to be a charge on the moneys received by the sequestrator. The remaining clauses of the Act, 58 to 73, provide against certain contingencies and complete the enactments on all points not fully detailed in previous clauses.

RESIGNATION OF INCUMBENTS.

[34 and 35 Victoriæ, cap. 44.—13th July, 1871.]

An Act to enable Clergymen incapacitated by illness to resign their Benefices, with Provisions of Pensions.

This Act, consisting of thirteen clauses, after defining the terms "incumbent," "benefice," "bishop," and "patron," provides (Clause 5) that, "on a representation being made to the bishop in the form contained in a schedule at the end of the Act by the incumbent of any benefice who has held the incumbency for seven years continuously, that he desires, on the ground of being incapacitated by permanent mental or bodily infirmity from the due performance of his duties, to retire from his benefice under the provisions of this Act, it shall be lawful for the bishop to cause a commission to be issued under his hand and seal, addressed to five persons (Clause 6), including the archdeacon or rural dean, two incumbents of the diocese (one named by the bishop and the other by the incumbent), a local magistrate (to be nominated by the chairman of Quarter Sessions or the Lord Lieutenant of the county), and another to be nominated by the patron; these commissioners are to make their return to the bishop within three months. If the return shall certify that the resignation is expedient, and the patron of the living consents, the bishop shall cause a declaration to be prepared specifying the amount of pension to be allowed out of the benefice to the retiring clergyman (Clause 9). This pension is to be a legal charge on the said benefice, recoverable at law (Clause 10); it is in no case to exceed one-third part of the net annual value of the benefice resigned; and it is provided that no benefice shall be charged at one and the same time with more than a single pension. There are other clauses limiting the Act in its operation to England and Wales and the Channel Islands (Clause 3); enabling the commissioners to examine witnesses on oath touching matters which they may judge to be material (Clause 8); holding the pensioned clergyman still amenable to the same ecclesiastical discipline to which he would have been subjected as an actual incumbent (Clause 13); providing that the parsonage house shall in no case belong to the retiring clergyman, but to his successor (Clause 14); allowing for the cessation or variation of the pension under certain circumstances (Clause 15); and providing in certain cases for an appeal to the archbishop (Clause 9); There are further regulations, as to the costs of the commission and the fees of the bishop's secretary or registrar of the diocese (Clauses 16, 17); and Clause 18 enables the committee of the estate of a lunatic incumbent to exercise in his name and on his behalf the right of resigning his benefice (Clause 18). In the event of the patron refusing

his consent, it is provided that the archbishop shall decide whether such resignation shall be accepted or not, and that such decision shall be final.

SEQUESTRATION OF LIVINGS.

[34 and 35 Victoriæ, cap. 45.—13th July, 1871.]

An Act for amending the Law relating to Sequestration of Ecclesiastical Benefices.

This Act applies the Statute 1 and 2 Victoriæ, cap. 106, relative to Ecclesiastical Benefices. It provides that where a living is sequestrated under the Incumbents' Resignation Act, 1871 (see previous paragraph), or owing to his bankruptcy, the sequestration continuing in force for six months, the bishop of the diocese shall at the expiration of that time appoint such clergy as the case requires to perform the duty, with stipends according to his discretion, provided that the outlay does not exceed for a—

Population of	500,	the sum of	£200	per annum.
„	1,000,	„	£300	„
„	3,000,	„	£500	„
Above	3,000,	„	£600	„

And provided also that the whole of such stipend or stipends shall not exceed two-thirds of the annual value of the benefice. The bishop may at any time revoke the appointment and licence of clergy thus appointed, and may inhibit the clergyman whose benefice is sequestrated from officiating in his diocese. During the period of sequestration the right of patronage belonging to any benefice lapses to the bishop, and the incumbent of a sequestrated benefice is precluded from accepting any other benefice without the consent of the bishop and the sequestrator.

ECCLESIASTICAL TITLES.

[34 and 35 Victoriæ, cap. 53.—24th July, 1871.]

An Act to repeal an Act for preventing the Assumption of certain Ecclesiastical Titles in respect of places in the United Kingdom.

This short Act repeals the Statute 14 and 15 Vict., cap. 60 which imposed certain penalties on persons assuming territorial titles as archbishop, bishop, or dean of places in England or Ireland, other than those recognised by law. The preamble declares the effect of the measure, and the single clause provides that "such repeal shall not in any way authorise or sanction the conferring or attempting to confer any rank, title or precedence, authority, or jurisdiction on or over any subject of this realm, by any person or persons in or out of this realm other than the Sovereign thereof."

PRIVATE CHAPELS IN SCHOOLS AND INSTITUTIONS.

[34 and 35 Victoriæ, cap. 66.—14th August, 1871.]

An Act to amend and define the Law relating to Private Chapels and to Chapels belonging to Colleges, Schools, Hospitals, Asylums, and other Public Institutions.

This short Act consists of three clauses with a preamble declaring that "it is expedient to amend the law relating to certain chapels."

The first clause provides that the Bishop of the Diocese may license a Clergyman to "any chapel belonging to any college, school, hospital, asylum, or public or charitable institution," to serve such chapel and administer therein the Sacrament of the Lord's Supper, and perform such other offices and services of the Church of England as shall be specified in the license with the exception of the solemnisation of marriage. The next clause provides that such licensed Clergyman is to be "subject to no control or interference on the part of the incumbent of the parish," but, at the same time, is in no way to interfere with his "cure of souls." It is also directed that the offertory at licensed private chapels is to be disposed of "as the Minister thereof shall determine, subject to the direction of the ordinary."

III. CRIME AND PAUPERISM.

THREATS AND MOLESTATIONS.

[34 and 35 Victoriæ, cap. 32.—29th June, 1871.]

An Act to amend the Criminal Law relating to Violence, Threats, and Molestations.

This Act renders any person liable to an imprisonment, with or without hard labour, for a period not exceeding three months, who uses violence to any person or property; who threatens or intimidates any person in such a manner as would justify a justice of the peace, on complaint made to him, to bind him over to keep the peace; who molests or obstructs any person, as defined by the Act, with a view to coerce him—that is, being a master, to dismiss or to cease to employ any workman, or being a workman, to quit any employment or to return work before it is finished; being a master not to offer, or being a workman not to accept, any employment or work; being a master or workman to belong or not to belong to any temporary or permanent association or combination; being a master or workman to pay any fine or penalty imposed by any temporary or permanent association or combination; being a master to alter the mode of carrying on his business, or the number or description of any persons employed by him. A person is to be deemed to molest or obstruct another if he persistently follow such person about from place to place; if he hide any tools, clothes, or other property owned or used by such person to deprive him of or hinder him in the use thereof; if he watch or beset the house or other place where he resides or works or carries on business or happens to be, or the approach to the house or place, or if with two or more persons he follow such person in a disorderly manner in or through any street or road. The provision is not to prevent any person being liable to any other or higher punishment, except that he is not to be punished twice for the same offence. No person is to be liable to punishment for doing or conspiring to do any act on the ground that such act restrains or tends to restrain the free course of trade, unless such act is one specified by the new statute and is done with the object of coercing as already mentioned. The second clause enacts that all offences under this Act shall be prosecuted under the provisions of the Summary Jurisdiction Acts, under certain conditions,

and the third clause provides for an appeal by any person aggrieved at a decision by the Court of Summary Jurisdiction. The fifth clause provides that no interested person, either master, father, son, or brother of a master in the particular manufacture, trade, or business in or in connection with which any such offence has been committed shall be eligible to serve as a member of a Court of Summary Jurisdiction or Appeal for the purposes of this Act.

DISCHARGE OF PAUPERS FROM WORKHOUSES.

[34 and 35 Victoriæ, cap. 108.—21st August, 1871.]

An Act to regulate and control the Discharge of Paupers from Workhouses and Wards provided for the Casual Poor.

The object of the statute as stated in the preamble is to remove doubts as to the length of time for which paupers may be lawfully required to remain in workhouses after giving notice of their intention to discharge themselves, also, to make provision for regulating and controlling the discharge of paupers from workhouses and wards provided for wayfarers and wanderers, and for dealing with disorderly paupers in the workhouse, and for the suppression of vagrancy. The Act is not to apply to Scotland or Ireland. A pauper, wishing to quit the workhouse, who has not previously discharged himself within a month, is to give twenty-four hours' notice; if he has discharged himself once or oftener within a month, forty-eight hours' notice; if more than twice within two months before giving the notice, seventy-two hours. The guardians can detain a pauper for these periods, but they (or the master if the board is not sitting) may make exceptions in cases where they think fit. The fifth clause enacts that "A casual pauper shall not be entitled to discharge himself from a casual ward before eleven o'clock in the morning on the day following his admission, nor before he has performed the work prescribed for him as hereinafter mentioned, and where a casual pauper has been admitted on more than two occasions during one month into any ward of the same union, he shall not be entitled to discharge himself before nine o'clock on the morning of the third day after his admission, and he may at any time during that interval be removed by any officer of the guardians or by a police constable to the workhouse of the union, and be required to remain in such workhouse for the remainder of the period of his detention." There are provisions as to the metropolis, and a casual who leaves the ward or refuses to do the work prescribed, or makes a false statement for the purpose of obtaining relief, is to be deemed an idle and disorderly person, and to be dealt with under the 3rd section of the 5 Geo. 4, c. 83, and after a first conviction to be dealt with under the 4th section for destroying or injuring his clothes. Workhouse officials may take disorderly paupers before justices without a warrant. The guardians of every union are to provide proper casual wards as the Poor Law Board consider necessary. There is also a provision as to asylums for the casual poor in the metropolis. The provisions as to the discharge and detention of paupers are to take effect, notwithstanding the 5th section of the 5 & 6 Vict. c. 57.

PREVENTION OF CRIME.

[34 and 35 Victoriæ, cap. 112.—21st August, 1871.]

An Act for the more effectual Prevention of Crime.

This Act, which is to be cited as "The Prevention of Crimes Act, 1871," has twenty-two clauses.

It first provides certain *Amendments in the Penal Servitude Acts* (Clauses 3—5). Any constable may, if authorised by the chief officer of police of the district, take into custody without warrant any convict holding a licence, if it appears to such constable that he is getting his livelihood by dishonest means, and may bring him before a court of summary jurisdiction, where, if the court so decides, his licence is to be forfeited. If the holder of such a licence is guilty of any breach of its conditions, he may, on summary conviction, be liable to three months' imprisonment. Every convict holding a licence is to notify the place of his residence to the chief officer of police of the district in which he resides, and when he changes his residence to notify the same both in the district he leaves and in that to which he goes. And every male holder of such a licence is once in every month to report himself to the chief officer or to such person as he may direct. Failure to do this is to be an offence under this Act, for which the licence may be forfeited; or, if the term of penal servitude has expired at the date of conviction, he may be imprisoned for not more than one year.

The next provisions (clauses 6 and 7) relate to a *Register of Criminals.* Registers of convictions are to be kept in a prescribed form; that for England in London; that for Scotland in Edinburgh; that for Ireland in Dublin. The gaoler of every gaol is to make returns of the persons convicted of crime, and coming within his custody. Regulations are to be made for photographing all prisoners convicted of crime confined in any prison. Refusal to obey any regulation made in pursuance of this section is to be deemed an offence against prison discipline. The expenses of keeping the register are to be paid by the Treasury; the expenses of photographing the convicts are to be part of the expenses incurred in the maintenance of the prison.

The next division (clauses 7 to 14) relates to the *Punishment of certain Offenders.* Where any person is convicted on indictment of a crime, and a previous conviction of a crime is proved against him, he shall, at any time within seven years after the last conviction, be subject to not more than one year's imprisonment for the following offences:—(1.) Getting his livelihood by dishonest means. (2.) If on being charged with any offence, and being required by a court of summary jurisdiction to give his name and address, he refuses to do so, or gives a false one. (3.) If found in any place under circumstances to satisfy the court that he was about to commit or aid in the commission of an indictable offence, or waiting for an opportunity to commit such offence. (4.) If found in any dwelling-house, yard, building, premises, garden, &c., without being able to account to the satisfaction of the court for being so found. For this last offence he may be arrested by the owner or his servants, and detained until he can be delivered to a constable. Where a person is convicted after a former conviction, the court may direct that he be subject to police supervision for seven years or less. Every person subject to such supervision is to report himself to the police in the same manner as is above provided for a

convict having a licence, under penalty of imprisonment for not more than one year. The rules of procedure on indictments contained in 24 and 25 Vict., c. 96, are to be applicable to indictments under this Act. Every keeper of a lodging-house, beerhouse, or public-house, or place where intoxicating liquors are sold, or any place of public entertainment or public resort, who knowingly lodges or harbours thieves, or reputed thieves, or permits them to meet or assemble therein, or allows the deposit of goods, having reasonable cause to believe them to be stolen, is to be liable to a penalty not exceeding 10*l.*, and, in default of payment, to imprisonment for not more than four months, and may also be required to enter into recognisances for good behaviour for twelve months. But the security is not to exceed 20*l.*, and the imprisonment in default to be for not more than three months. The licence may also be forfeited for a first offence, and must be so on a second offence, and he is to be incompetent to hold any similar licence for one year. Brothel keepers harbouring thieves or reputed thieves are to be subject to a penalty not exceeding 10*l.*, and, in default of payment, to imprisonment for not exceeding four months. An assault on a constable in the execution of his duty is to be punishable with a penalty not exceeding 20*l.*, or with imprisonment for not exceeding six months, and on a second conviction within two years, for nine months. The old metals named in a schedule in the Act, viz., lead, copper, brass, tin, pewter, and German silver, are not to be purchased in quantities less than those stated in the schedule, under a penalty of not more than 5*l.* When a woman has been twice convicted, any of her children under fourteen, being under her care, and having no visible means of subsistence, may be ordered by the court to be sent to an industrial school.

The Act then proceeds (in clauses 15 and 16) to make the following amendments in the criminal law:—Loitering by a suspected person or reputed thief in any place with intent to commit a felony, has been more fully defined, to meet a difficulty introduced by a recent decision. It is further enacted that to prove the intent it shall not be necessary to show any particular act tending to show the purpose, but he may be convicted if it appears to the court that his intent was to commit a felony. A chief officer of police may authorise, in writing, any constable to search premises for stolen property where, first, they have been within the preceding twelve months in the occupation of a person convicted of any offence involving fraud or dishonesty; or, secondly, when the person in the occupation of the premises has been convicted of any offence involving fraud or dishonesty. It is not necessary to specify any particular property, but generally. In case of seizure the property alleged to be stolen is to be brought before a court of summary jurisdiction, and the occupier is to account for the possession of the same.

Clause 17 provides for the legal proceedings under the Act before courts of summary jurisdiction. The description of the offence in the words of the Act is to be sufficient. Any exemption, exception, &c., is to be proved by the defendant, and need not be specified in the complaint. No warrant or conviction is to be quashed for want of form. A previous conviction may be proved by producing a record or extract of such conviction and proof of identity. In case of indictable offence a certificate signed by the clerk of the court or officer having custody of the records of the court by which such conviction was made, is to be

admissible in evidence without proof of the signature or official character of the person signing.

Clause 19 enacts that where proceedings are taken against any person for having possession of goods knowing them to be stolen, or for possession of stolen property, evidence may be given at any stage of the proceedings of other property stolen within twelve months for the purpose of showing guilty knowledge. And if any such person has, within five years, been convicted of any offence involving fraud or dishonesty, evidence of such previous conviction may be given at any stage of the proceedings, and may be taken into consideration for the purpose of proving guilty knowledge; but in such case not less than seven days' notice is to be given to the accused of such intended proof.

The Habitual Criminals Act 1869 is repealed.

IV. FINANCE AND TAXATION.

BANK HOLIDAYS.

[34 and 35 Victoriæ, cap. 17.—25th May, 1871.]

An Act to make Provision for Bank Holidays, and respecting Obligations to make Payments and do other Acts on such Bank Holidays.

After reciting the expediency of making the day after Christmas-day and certain other days Bank holidays, it is enacted (Clause 1) that bills due on Bank holidays shall be payable on the following day, and all proceedings shall be valid if done on such day as if it was the actual day of payment. When the day on which notice of dishonour should be given, or bills for presentation become due, falls on any such holiday, the notice, &c., shall be good if given on the following day (Clause 2). No person is compellable to make any payment on a Bank holiday, which he would not be compelled to make on a Christmas-day or Good Friday (Clause 3). The Queen is empowered to appoint, by Proclamation, any day as a Bank holiday, or to alter, by Order in Council, the days at present fixed for such holidays, appointing other days in their place, which shall be considered as Bank holidays under this Act. The schedule declares the following days to be Bank holidays:—Easter Monday; Monday in Whitsun week; first Monday in August; the 26th December, if a week day.

EAST INDIA STOCKS (DIVIDENDS) ACT.

[34 and 35 Victoriæ, cap. 29.—29th June, 1871.]

An Act to facilitate the Payment of Dividends on India Stocks.

This Act amends the twentieth section of the National Debt Act of 1870, and provides that the power then given to banks to send warrants through the post, shall, as regards India Stock, be in future exercised, with the sanction of the Secretary of State for India instead of the Treasury, and where the holder of any such Stock desires to have his dividend warrant sent him by post, he shall make his request, as provided in the National Debt Act, but on a form approved by the Bank and the Secretary of State for India in Council.

LIFE ASSURANCE COMPANIES ACT (1870) AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 58.—24th July, 1871.]

An Act to amend the Life Assurance Companies Act, 1870.

The first clause of this Act amends section three of the Life Assurance Companies Act, 1870, and enacts that every sum required by that Act to be deposited with the Accountant-General of the Court of Chancery shall be paid into the Court of Chancery, and orders with respect to the payment of such money in and out of Court, the investment and return thereof, the payment of dividends and interest thereof, may be altered and revoked in the same manner as orders with respect to other moneys controlled by the said Court. The second clause recites that the words "chapter twenty-four" are to be inserted in section 25 of the Life Assurance Companies Act, 1870, in the place of the words "chapter forty-one," and this alteration is to be made by the Queen's Printer in all future copies of the Act.

STAMP ACT (1870) AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 4.—30th March, 1871.]

An Act to amend the Stamp Act, 1870, *in relation to Foreign Securities, Mortgages of Stock, and Proxy Papers.*

This Act first repeals sections 113 and 114 of the Stamp Act of 1870, and then proceeds to define what shall be deemed a "foreign security." Section 3 imposes a penalty on issuing any foreign security unstamped.

The stamp duty on proxy papers is to be 1*d.*, and that on mortgage of any stock or marketable security is to be—for every 5,000*l.* of the amount received, 10*s.*; and no release or discharge of such mortgage is to be chargeable with any *ad valorem* duty.

---

5. LAW AND JUSTICE.

JUDICIAL COMMITTEE OF THE PRIVY COUNCIL.

[34 and 35 Victoriæ, cap. 91.—21st August, 1871.]

An Act to make further Provision for the Dispatch of Business by the Judicial Committee of the Privy Council.

This Act makes further provision for the dispatch of business by the Judicial Committee of the Privy Council, by the appointment of four qualified persons, as directed, whether already members of the Privy Council or not, to act as members of the Judicial Committee. The special qualification is this: that at the date of appointment they shall have been either Judges of one of the Superior Courts in Westminster or a Chief Justice in Bengal, Madras, or Bombay. The office, if then held, is to be vacated, but pensions are to be given as if they had continued in office. The salary is to be 5,000*l.* per annum. They are to attend the sittings of the Committee when summoned, unless prevented by reasonable cause; they are to hold office during good behaviour, but subject to such arrangements as Parliament may afterwards make for the constitution of a supreme court of appellate jurisdiction.

LOANS UNDER THE POOR LAW ACTS.

[34 and 35 Victoriæ, cap. 11.—24th April, 1871.]

An Act to make further Provision in reference to Loans obtained under the Poor Law Acts.

This Act is designed to enable boards of guardians who had contracted loans prior to the Act of 1869 to avail themselves of its provisions, and also to give additional powers in relation to loans. It enacts that boards who have borrowed money before the Act of 1869 may extend the time for the repayment. Another section empowers them to borrow money at a lower rate of interest for the purpose of redeeming securities taken up at a higher rate. Half-yearly payments may be made of annual instalments.

LODGERS' GOODS PROTECTION.

[34 and 35 Victoriæ, cap. 79.—16th August, 1871.]

An Act to protect the Goods of Lodgers against Distresses for Rent due to the Superior Landlord.

The object of this statute is to protect the goods of lodgers against the liability for distress for rent due to the superior landlord. It enacts that where a superior landlord levies a distress upon the goods of a lodger for rent due from his immediate tenant, such lodger may serve upon the landlord or bailiff a declaration in writing stating that such tenant has no right of property or beneficial interest in the goods so distrained, and that they are the lawful property of such lodger, and also what rent is due from such lodger to his immediate landlord, which rent he may pay to the party distraining. To such declaration is to be annexed a correct inventory, subscribed by the lodger, of the furniture, goods, and chattels referred to in the declaration.

A wilfully false declaration is to be a misdemeanor.

A distress after such notice is to be illegal.

The lodger may apply to a justice of the peace for an order for restoration of his goods, which application is to be heard by two justices, who shall inquire into the truth of the declaration, and make an order accordingly, and the superior landlord is also to be liable to an action at law at the suit of the lodger.

BANKRUPTCY DISQUALIFICATIONS.

[34 and 35 Victoriæ, cap. 50.—13th July, 1871.]

An Act for disqualifying Bankrupts from Sitting or Voting in the House of Lords.

The second clause enacts that every peer who becomes bankrupt shall be disqualified from sitting or voting in the House of Lords or any Committee thereof. The third clause declares that a peer is to be deemed to have become bankrupt, first, when an order has been made adjudicating him bankrupt; secondly, when a special resolution has been passed under the Bankruptcy Act, 1869, declaring that his affairs are to be liquidated by arrangement.

On the annulment of such order or adjudication the disability is to cease.

The fifth clause provides that if a representative peer of Scotland or Ireland becomes bankrupt, his seat shall be declared vacant, unless his bankruptcy be determined within twelve months. The sixth clause enacts that a disqualified peer voting or sitting in the House of Lords shall be held guilty of a breach of privilege.

COUNTY JUSTICES QUALIFICATION AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 18.—25th May, 1871.]

An Act to amend the Law disqualifying Attorneys, Solicitors, and Proctors in Practice from being Justices of the Peace for Counties.

This short Act repeals the statutes which disqualified attorneys, solicitors, and proctors in practice from becoming justices of the peace for counties, but it provides that no person shall be capable of becoming or being a justice of the peace for any county in England or Wales (not being a county of a city or county of a town) in which he shall practise and carry on the business of an attorney, solicitor, or proctor; and where any person carries on such business in any city or town which is a county of itself, he shall, for the purposes of this Act, be deemed to carry on the same in the county in which the city or town is situated. Nothing in the Act is to affect coroners.

---

6. TRADE AND SHIPPING.

MERCHANT SHIPPING ACTS AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 110.—25th August, 1871.]

An Act to amend the Merchant Shipping Acts.

This Act is divided into three parts, relating respectively to Parts II, III, and IV, of the Merchant Shipping Act of 1854, under the heads of "Registry," "Masters and Seamen," and "Safety." It consists of twelve clauses.

By Section 7, when a sailor is charged with desertion, or with refusing to join his ship, or to put to sea, the court hearing such charge have power on one-fourth of the crew, or one-fifth, if they exceed twenty in number, alleging that the ship is not fit to proceed to sea, or that the accommodation is insufficient, to order a survey to be held, and to adjudge the case on the report of such survey. Such a plea cannot be set up by the seaman charged, except where he shall have, previously to his leaving the ship, complained to the master of the state of the vessel, and if on investigation the ship shall be found to be seaworthy, or the accommodation sufficient, the cost of the survey is to be paid by the person demanding it; but if the ship is unfit to proceed, the master, or owner, must bear the expense. By Section 5, the Board of Trade may appoint officers to record the draught of water of seagoing vessels on leaving port, and the master is bound to enter such draught in his log-book. The record entered by the proper officials is to be evidence in any subsequent proceeding of the draught at the time of leaving port. The 10th section gives still further powers to the Board of Trade. On the complaint of any person in writing, containing the name and address of the complainant, the Board of

Trade have power to order a survey of a ship therein alleged to be unseaworthy, and if the surveyor appointed by them reports the ship to be in such a state that she could not proceed to sea without serious danger to human life, they may declare her unseaworthy, and she may be detained. Shipowners are protected to some extent from the danger of unfounded accusations of unseaworthiness by the complainant being made liable for costs in case of his not substantiating his complaint, but they will have to pay costs if the ship be condemned. They are also given a right of appeal from the report of the surveyor to the local Admiralty Court, and such court has power to order a fresh survey, and to make such order as to detention, costs, and damages as it may see fit. To send a ship to sea in an unseaworthy condition, so as to endanger life, is, by the 11th section, made a misdemeanour, and to avoid conviction for the offence, the person sending the ship must show (he may give evidence himself for this purpose) that he used all reasonable means to keep her seaworthy, was ignorant that she was not so, or that her going to sea was reasonable under the circumstances.

WORKSHOP REGULATION ACT (1867) AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 19.—25th May, 1871.]

An Act for Exempting Persons professing the Jewish Religion from Penalties in respect of young Persons and Females professing the said Religion, working on Sundays.

This Act provides that no penalty shall be incurred by any person in respect of any work done on Sunday, either in a workshop or in the tobacco manufacture, by any young person or woman professing the Jewish religion; provided that:—

(1.) The workshop or manufactory is in the occupation of a person professing the Jewish religion, is on Saturday closed until sunset, and is not open for traffic on Sunday:

(2.) That such workshop or manufactory is open on Sundays to the officers authorised by the Factory and Workshops Act, 1867;

(3.) The total number of hours of labour of such young person or woman in any one week, or day, or period of twenty-four hours, at such workshop or manufactory does not exceed the period allowed by the Workshop Regulation Act of 1867.

FACTORY AND WORKSHOPS ACTS AMENDMENT ACT.

[34 and 35 Victoriæ, cap. 104.—21st August, 1871.]

An Act to amend the Acts relating to Factories and Workshops.

The preamble to this Act declares that it is expedient to provide for the enforcement of the Workshops Regulation Act of 1867, by inspectors of factories and to amend the Acts relating to factories and workshops. Clause 3 transfers the enforcement of the above named Acts from the local authority, to the inspectors of workshops. Clause 5 provides that no female under the age of sixteen, or child under ten, shall be employed in the manufacture of bricks and tiles, not being ornamental tiles. Clause 7 defines the accidents of which notice is required to be given in a factory, and which are to include:—

(1.) Any accident causing loss of life to persons employed in the factory; and

(2.) Any accident causing bodily injury to persons employed, and produced by machinery, or by explosion, or escape of gas or steam, or metal, and of such a nature as to prevent the person injured from returning to his work within forty-eight hours after the accident.

Clause 8 relates to the penalties to be paid under the Act, and the following clause gives lengthened details as to the means for the recovery of penalties in Scotland. Clause 10 declares that workshops belonging to the Crown are not to be exempted from the Factory Acts 1833–1871, although power is reserved to one of Her Majesty's Principal Secretaries of State to exempt such an establishment temporarily from the provisions of the Acts. In the first schedule discretionary power is given to the Secretary of State to relax these rules under certain conditions in the case of trades where additional labour is required at special seasons, giving notice of his intention to do so, in the "London Gazette." The second schedule details the statutes repealed by this Act.

TRADES UNIONS.

[34 and 35 Victoriæ, cap. 31.—29th June, 1871.]

An Act to amend the Law relating to Trades Unions.

This Act contains twenty-four clauses, divided into four principal sections.

The second clause declares that a trade union is not to be deemed unlawful by reason only of its being in restraint of trade. The third clause provides that nothing in the Act is to enable any court to entertain any legal proceeding instituted to recover damages for the breach of any agreement:

(1.) Between members of a trade union concerning the conditions on which any of the members shall or shall not sell their goods, transact business, or employ, or be employed.

(2.) For the payment of a subscription or a penalty to a union.

(3.) For the application of the union funds to provide benefits for the members, or contribution to any person not a member for acting in conformity with the rules of the union.

(4.) For any agreement between one union and another.

(5.) For any bond given to secure any of these purposes.

The provisions of the Friendly Societies Acts are not to apply to trades unions (clause 5). But any seven or more members subscribing the rules of a union may register it under this Act, such registration to be void if any one of the purposes of such union shall be unlawful (clause 6). A registered union may purchase or lease land not exceeding one acre (clause 7). All property is to be vested in the trustees, who may sue and be sued in respect of it. They are to be liable only for moneys actually received by them. Treasurers and other officers are duly to account, and any court of competent jurisdiction may summarily inquire into any alleged default, and order delivery up of books and papers and repayment of money, with a penalty not exceeding 20*l.*, and on refusal, to imprison the offender for not more than three months. Rules are enacted for registration of trade unions, with a registrar appointed for the purpose (clause 13). The

rules are to be signed and deposited with the registrar, and a copy to be given to any person applying for them for a shilling (clause 14). Such union is to have a registered office, and to make annual returns of the receipts, funds, effects, and expenditure of the union in such form as the registrar may direct, under a penalty of 5*l.*, and 50*l.* for making a false entry or omission in such return (clause 15).

The registrar is to be the Registrar of Friendly Societies (clause 17). Circulation of false copies of the rules is to be a misdemeanor. All offences and penalties are to be prosecuted and recovered under the Summary Jurisdiction Acts. The description of any offence in the words of the Act is to be sufficient. An appeal is to lie to the quarter sessions, but no interested person is to act as a member of the court of appeal.

The term Trade Union is defined in Clause 23.

The Act is to be cited as "The Trade Union Act, 1871."

PUBLIC HOUSE LICENSES' SUSPENSION ACT.

[34 and 35 Victoriæ, cap. 88.—17th August, 1871.]

An Act to restrict during a limited time the grant by Justices of the Peace of new Licenses and Certificates for the sale of Intoxicating Liquors by Retail, and for other purposes.

The purpose of this Act is to suspend for one year the granting of new licenses for the sale of intoxicating liquors. The first section enacts, that after the passing of this Act (17th August, 1871) until the 1st September, 1872, the justices shall not grant, otherwise than by way of renewal, any new license, or any new certificate, under the Wine and Beerhouse Act, 1869. But if it should appear to the justices that such refusal would cause "inconvenience to the locality or to the public, or injury to any such person or body corporate," such justices may grant such license provisionally and shall forthwith send to the Secretary of State a report in writing of such provisional grant, specifying the circumstances on account of which it was made. The Secretary of State may confirm such provisional grant, and thereupon the license is to be granted; but until so confirmed it is to have no effect. The justices may remove a license from premises in their division or in any adjoining division within the same county, to any other eligible premises in their division, if in their opinion such removal is necessary in order to meet the wants of the neighbourhood to which the removal is made, and if no objection is made by the occupier of the premises from which such removal is made, or by any other person appearing to such justices to have reasonable ground of objection to the removal. No appeal is to be allowed against a refusal to remove, but against a removal any person interested in the premises may appeal to the quarter sessions. The same notices are to be given for a removal as for an application for a new license. The notice is to be for one month and to be advertised in the newspapers. A doubt having arisen with respect to the power of justices to exercise their discretion as to granting a certificate where the license had ceased to be in force by forfeiture, lapse of time, or otherwise, it is now enacted by section 3, that in case of any such application, the justice shall have the same discretion as on an application for a new certificate. It is to be cited as "The Intoxicating Liquors Suspension Act, 1871."

PEDLARS' ACT.

[34 and 35 Victoriæ, cap. 96.—21st August, 1871.]

An Act for granting Certificates to Pedlars.

This important Act, consisting of 25 clauses, repeals the Pedlars' Act of 1870.

The first three clauses define the terms used in the Act. The fourth provides that a penalty of not exceeding 10*s.* for the first, and 1*l.* for a subsequent offence shall be imposed upon persons acting as pedlars without a certificate. Clause 5 declares that the certificate is to be granted by the chief officer of police in the district in which the applicant has resided for one month previous to his application, such officer being satisfied that he is above seventeen years old, a person of good character, and in good faith intends to carry on the business. The fee is to be 5*s.*, and the certificate is to remain in force for one year. On proof of loss a new certificate may be granted. Clause 6 enacts that this certificate will authorise the person to act as a pedlar within the police district in which it is taken out, but it may be extended by indorsement to other districts than that for which it was granted. A register of certificates is to be kept in each district (clause 8). A certificate is not to be assigned nor borrowed (clauses 10, 11). Penalties are inflicted for forging certificates or using forged ones (clause 12). The possession of a certificate is not to exempt the bearer from any provision of the Vagrant Act (clause 13). Convictions are to be indorsed on the certificate (clause 14). An appeal against a refusal lies to any court having summary jurisdiction, which may also deprive the pedlar of his certificate (clauses 15, 16). The duties of a pedlar are defined by clause 17. He is to produce his certificate on demand to (1) any justice of the peace, (2) any constable or police officer, (3) any person to whom he offers goods for sale, (4) any person in whose private grounds or premises he is found, and if he refuse he may be arrested by such person, and forthwith conveyed before a justice. The police are empowered by clause 19 to examine a pedlar's pack. Summary proceedings for offences under the Act are to be taken in England before two justices or one police magistrate. Whatever may be done under the Act by the chief officer of police may be done by any police officer under his command duly authorised by him. A certificate is not to be required from (1) commercial travellers, (2) sellers of vegetables, fruit, fish, or victuals, (3) persons exposing goods for sale in any public market or fair.

---

7. LOCAL GOVERNMENT.

LOCAL GOVERNMENT BOARD ACT.

[34 and 35 Victoriæ, cap. 70.—14th August, 1871.]

An Act for constituting a Local Government Board, and vesting therein certain Functions of the Secretary of State and Privy Council concerning the Public Health and Local Government, together with the Powers and Duties of the Poor Law Board.

The preamble to this important Act declares that it is expedient to concentrate in one department of the Government as hereinafter

provided the supervision of the laws relating to the public health, the relief of the poor, and local government.

The second clause provides that a board shall be established, to be called the Local Government Board, and from and after the establishment of such board the Poor Law Board shall cease to exist, and all powers and duties vested in or imposed on the Poor Law Board by the several Acts of Parliament relating to the relief of the poor and any other Acts, or vested in or imposed on one of Her Majesty's Principal Secretaries of State, so far as such powers and duties relate to England, shall be transferred to and imposed on the said Local Government Board, and, except as otherwise provided by this Act, shall be exercised and performed by such Board in like manner and form, and subject to the same conditions, liabilities, and incidents respectively as such powers and duties might before the passing of this Act have been exercised and performed by the authorities in whom the same were then vested respectively, or as near thereto as circumstances may admit.

The third clause enacts that the Local Government Board shall consist of a president to be appointed by Her Majesty, and to hold office during the pleasure of Her Majesty, and of the following *ex officio* members, that is to say:—The Lord President of Her Majesty's most Honourable Privy Council, all Her Majesty's Principal Secretaries of State for the time being, the Lord Privy Seal, and the Chancellor of the Exchequer. The *ex officio* members are to receive no salaries. The President and one of the Secretaries may, by the fourth clause, sit in Parliament.

The fifth clause declares that a rule, order, or regulation made by the Local Government Board shall be valid if it is made under the seal of the Board, and signed by the President or one of the *ex officio* members of the Board, and countersigned by a secretary or assistant secretary.

Clause 7 refers to the powers of the Board, and clause 8 directs that where under any Act, whether passed before or after the passing of this Act, any return relative to any rate, toll, tax, or due raised in England (other than such as is raised for the public revenue of the United Kingdom) is required to be sent to one of Her Majesty's Secretaries of State or any other department of the Government, a duplicate of such return shall in like manner be sent to the Local Government Board, and any person failing to send the same shall be subject to the like penalties as a person neglecting to send any return under the Act of the session of the twenty-third and twenty-fourth years of the reign of Her present Majesty, chapter fifty-one.

METROPOLIS WATER ACT.

[34 and 35 Victoriæ, cap. 113.]

An Act to amend "the Metropolis Water Act, 1852;" and to make further provision for the due Supply of Water to the Metropolis, and certain places in the neighbourhood.

This Act amends and repeals in part 15 and 16 Vict. cap. 84. There are 51 sections in the Act and three schedules. The object of the statute, as expressed in the preamble, is to make further provision for securing to the metropolis a constant supply of pure and wholesome

water. It is with the recited Act (15 and 16 Vic., c 84) to be construed as one Act. "From and after the passing of this Act (Aug. 21) every company shall on Sundays as on other days supply sufficient pure and wholesome water for the domestic use of the inhabitants within their water limits." After eight months from the passing of the Act every company, when required so to do in the manner directed, is to provide and keep throughout its water limits a constant supply of water for domestic purposes, and make such water reach the top story. After six months from the passing the metropolitan authority may make application for a constant supply within such district, and when not provided an appeal is given to the Board of Trade. There are various regulations set forth in the statute, which are to be published, and penalties to be recovered for non-compliance. The companies may require owners and occupiers to provide proper "fittings," which term includes communication pipes, and also all pipes, cocks, cisterns, &c., used or intended for supply of water by a company to a consumer, and for that purpose placed in or about the premises of the consumer. Power is given to enter premises for the inspection and repair of the fittings. There are provisions as to fire-plugs. The Board of Trade may appoint persons to inquire and report on the quality of the water. There are various other provisions to carry out the preamble, and section 48 provides that an incoming tenant is not to pay the arrears of the outgoing tenant unless by express agreement. The schedules annexed to the statute explain the metropolitan authority, the districts, and the companies mentioned in the Act.

PUBLIC LIBRARIES.

[34 and 35 Victoriæ, cap. 71.—14th August, 1871.]

An Act to amend the Public Libraries Act, 1853.

This Act empowers Local Boards to put the principal Act of 1853 in execution. They are not to expend for the purposes of the Public Libraries Act more than one penny in the pound. They may borrow on mortgage of the general district rate, or any separate rate. The statute is not to apply to any district the whole or any part of which is within any municipal borough or within the jurisdiction of Commissioners under any Improvement Act.

VACCINATION.

[34 and 35 Victoriæ, cap. 98.—21st August, 1871.]

An Act to amend the Vaccination Act of 1867.

This Act consisting of 17 clauses amends and applies the Vaccination Act of 1867. The first four clauses contain the title of the Act, provide for its operations to commence on the 1st of January, 1872, and define the term "parent" wherever it is used in the Act as including any person having the custody of a child. Section 5 recites that whereas under the principal Act the appointment of an officer to enforce its provisions was optional, it is now made obligatory on the guardians of every union and parish to appoint and pay an officer for the purpose. Power is given to the Local Government Board to exercise the same powers in matters relating to vaccination,

with respect to guardians and officers of guardians as they exercise in all matters relating to the relief of the poor, and the Board is authorised to issue books, regulations and forms for carrying out the provisions of the Act, All fees received by the vaccination officer as such are to be accounted for to the guardians. The term "vaccination officer," is to stand for "registrar of births and deaths," in the Act of 1867, except as regards the duties of giving notices to parents requiring them to have their children vaccinated, described in section 15 of that Act, which is still to be performed by the registrar. Public vaccinators are to give parents without fee or charge, duplicates of the certificates signed by them as to children being successfully vaccinated, or as to their being insusceptible of or unfit for successful vaccination. The original certificates are to be transmitted by the public vaccinator within seven days after the operation has been performed. Parents whose children are vaccinated by private practitioners are bound to forward a certificate of the result of the operation to the public vaccinator within seven days, and he is to furnish them with a duplicate of the certificate without fee or charge. Persons acting in contravention of or failing to comply with the above provisions are liable to a penalty not exceeding 20*s.*, and persons signing a false certificate or duplicate are liable to fine or to imprisonment with or without hard labour, for a period not exceeding two years. Registrars are to furnish monthly lists of births and deaths to the vaccination officers. Persons applying to the public vaccinator for re-vaccination without charge are required to present themselves at the end of seven days for inspection, and are, on their request, to be furnished with a certificate of the result. On failing to present themselves they are liable to a charge of 2*s.* 6*d.*, which becomes a debt due by them to the guardians. Persons preventing a public vaccinator from taking lymph from a child, or refusing to present a child for vaccination, are liable to a penalty not exceeding 20*s.* Complaints may be made and information laid for any offence against the Act of 1867, or 1871, within twelve months after the offence was committed. Persons charged with neglecting to present children for vaccination and subsequently found not to be guilty of that offence, but of the offence of not transmitting the certificate to the officer may be at once convicted of the latter offence by the justices as if they had been charged therewith. Medical officers of Boards of Guardians performing vaccination of persons in houses where small-pox exists are to be paid the same sums as if they were public vaccinators.

FAIRS.

[34 and 35 Victoriæ, cap. 12.—25th May, 1871.]

An Act to further Amend the Law relating to Fairs in England and Wales.

It recites that certain fairs now held are unnecessary, the cause of grievous immorality, and very injurious to the inhabitants of the towns in which they are held, and it enacts that, on the representation of the magistrates of any petty sessional division within which any fair is held, that it would be for the advantage of the public to abolish it, the Secretary of State may, with the consent of the owner of the fair given in writing, order the abolition of such fair. But notice of such representation is to be given in the local newspapers, as also of the order of the Secretary of State when made.

GIFTS OF LAND FOR PUBLIC PARKS, SCHOOLS, AND MUSEUMS.

[34 and 35 Victoriæ, cap. 13.—25th May, 1871.]

An Act to facilitate Gifts of Land for Public Parks, Schools, and Museums.

This is a relaxation of the law of Mortmain. It enacts that all gifts and assurances of land of any tenure, whether by deed or will, for the purposes of public parks, a school-house for an elementary school, or a public museum, and all bequests of personal estate to be applied to the purchase of land for such purposes only, shall be valid, notwithstanding the Statute of Mortmain. But every will containing such gift, and every deed making such gift for other than full and valuable consideration, must be made twelve months before the donor's death, and enrolled in the books of the Charity Commissioners. Not more than twenty acres can so be given for a public park, not more than two acres for a museum, nor more than one acre for any one schoolhouse.

---

8. MISCELLANEOUS ACTS.

POST OFFICE DUTIES.

[34 and 35 Victoriæ, cap. 30.—29th June, 1871.]

An Act for the further Regulation of the Duties on Postage.

This Act, under which the Treasury Warrant for the reduced postal rates commenced on October 5th was issued, enacts that it shall be lawful for the Commissioners of the Treasury from time to time, by warrant, to reduce the rates of postage to be charged on letters sent by post between places in the United Kingdom, and to regulate the scale of weight according to which such rates are to be charged, and to revoke, alter, or add to any warrant previously made under the provision, "so, however, that the lowest rate of postage be not less than one penny." On the warrant mentioned taking effect the Acts recited are to be repealed to the extent set forth in the schedule.

DOGS ACT.

[34 & 35 Victoriæ, cap. 56.—24th July, 1871.]

An Act to provide further Protection against Dogs.

This Act contains seven sections, and enacts that any police officer or constable may take possession of any dog that he has reason to suppose to be savage or dangerous, straying in any highway and not under the control of any person, and detain it until claimed by the owner and expenses are paid. If the owner is known to the constable a letter is to be sent by post to him informing him of the capture. After a detention of three days, where the owner is not known, and five days where he is known, without a claim and payment of expenses, the dog is to be sold or destroyed, and if sold the money to be paid to the account of the local rate. All dogs captured are to be properly fed and maintained at the expense of the local rate. Any court of summary jurisdiction having notice that a dog is dangerous may make a summary order directing it to be kept by the owner under proper control or destroyed, under a penalty of 20*l.* for each day of failure to comply with such order. The local authority may, on suspicion of a mad dog being within its district, make an order placing

such restriction as they may deem expedient on all dogs, not being under the control of any person, for a prescribed period. Disobedience to subject the offender to a penalty of 20*s*. Penalties to be recovered under the Summary Jurisdiction Acts. The provisions as to detention, sale, or destruction of dogs found straying, are to apply to all dogs found at large in contravention of any order.

PETROLEUM ACT.

[34 and 35 Victoriæ, cap. 105.—21st August, 1871.]

An Act for the safe-keeping of Petroleum and other Substances of a like nature.

This statute, which repeals 25 and 26 Vict. c. 66, 31 and 32 Vict., c. 56, and sections 8 and 9, of 29 and 30 Vict., c. 69, is to continue in force till the 1st of October, 1872. In a schedule annexed directions are given for testing petroleum to ascertain the temperature at which it gives off inflammable vapour. By the Act harbour authorities are to frame and submit to the Board of Trade for confirmation bye-laws as to ships carrying petroleum, which are to be published; and where any ship or cargo is moored, landed, or otherwise dealt with, the owner and master, or the owner of the cargo, is to be liable to a penalty of 50*l*. for each day during which the contravention of the bye-laws is continued. The owner or master of a vessel carrying petroleum is to give notice to the harbour authority on entering the place. Labels are to be placed on all vessels containing petroleum. Regulations are to be made as to the storeage of petroleum, and, if otherwise deposited, it is to be forfeited and penalties are to be enforced. Licenses may be granted for the keeping of petroleum, with an appeal to the Secretary of State. Any officer authorised by a local authority may test petroleum in the manner prescribed, with penalties for obstructing the officer or refusing the liberty of testing. Power is given to search for petroleum, and to seize the same if not properly kept. The Act may be applied to other substances, and summary proceedings are to be taken to enforce the provisions for the public safety.

INDUSTRIAL AND PROVIDENT SOCIETIES.

[34 and 35 Victoriæ, cap. 80.—16th August, 1871.]

An Act to amend and explain the Law relating to Industrial and Provident Societies.

Doubts having arisen with respect to the powers given by the Act of 1867, sec. 4, to Industrial Societies to purchase, erect and sell, and sell and convey, or to hold lands with limited liability; in order to remove such doubts it is enacted by this Act that the rules of any such society may provide for the erection and repair of houses or buildings, and for the management and leasing, and disposal, and sale thereof to members of the society or others, of any lands or buildings for the time being held by the society, and for the appropriation of the purchase moneys. And the rules may prescribe the form of conveyances, mortgages, &c. In the case of copyholds so held the landlord is to admit as tenant such person or persons as the society may appoint to be its trustees on its behalf of such copyhold, on payment of the accustomed fines and fees. A receipt indorsed on any mortgage is to be sufficient discharge without a re-conveyance. All securities made before the passing of this Act are to be valid as if they had been made under its powers.

1. FINANCE, TAXATION, AND CURRENCY.

NATIONAL REVENUE AND EXPENDITURE.—The subjoined Tables show the GROSS PUBLIC REVENUE and EXPENDITURE of the United Kingdom in the Financial Year ended the 31st of March, 1871:—

SOURCES OF REVENUE:—	£	s.	d.
Customs	20,191,000	0	0
Excise	22,788,000	0	0
Stamps	9,007,000	0	0
Taxes (Land and Assessed)	2,725,000	0	0
Property Tax	6,350,000	0	0
Post Office	4,770,000	0	0
Telegraph Service	500,000	0	0
Crown Lands (Net)	385,000	0	0
Military and Naval extra Receipts and proceeds of Old Stores sold	1,081,705	0	11
Amount received from the Revenues of India on account of British Troops serving in that country	687,782	0	0
Allowance out of profits of Bank of England, per Act 24 Vict. c. 3	138,578	0	0
Miscellaneous Receipts	1,321,155	9	9
Total Gross Income	69,945,220	10	8
BRANCHES OF EXPENDITURE:			
Interest and Management of the Permanent Debt	22,255,060	1	2
Terminable Annuities	4,378,736	12	10
Interest of Exchequer Bonds	40,217	12	8
Interest of Exchequer Bills	149,584	17	6
Interest on Advances for Deficiency	2,837	13	6
Consolidated Fund Charges:—			
Civil List	406,525	1	7
Annuities and Pensions	281,829	15	7
Salaries and Allowances	130,994	16	5
Diplomatic Pensions	18,942	0	0
Courts of Justice	642,854	13	9
Miscellaneous Charges	632,049	6	9
Supply Services:—			
Army	13,430,400	0	0
Navy	9,456.641	0	0
Vote of Credit—War in Europe	1,350,000	0	0
Miscellaneous Civil Services	9,849,315	9	9
Salaries, Superannuations, &c., of Customs & Inl. Rev.	2,573,128	6	10
Ditto Ditto of Post Office	2,373,000	0	0
Telegraph Service	362,273	11	6
Packet Service	1,214,148	12	4
Total Ordinary Expenditure	£69,548,539	12	2
Expenses of Fortifications	150,000	0	0
Total Expenditure	£69,698,539	12	2
Excess of Income over Ordinary Expenditure (deducting Expenses of Fortifications, as above)	£246,680	18	6

Customs and Excise.—The Produce of the two great sources of **Public Revenue, Customs and Excise,** which together contribute considerably more than One-Half to the **National Income** of the **United Kingdom,** was as follows in the Financial Year ended March 31, 1871, the sums representing Gross Receipts:—

Customs Duties on Articles usually contributing not less than £1,000 Annually.	Gross Receipts. £	s.	d.
Beer Spruce	2,385	9	3
—— Of other Sorts, including Mum	1,103	1	11
Chicory	110,734	17	9
Cocoa, Cocoa Husks, and Chocolate	32,429	7	10
Coffee	420,145	5	2
Currants	299,914	2	3
Figs	30,243	6	2
Ginger, Preserved	872	17	10
Plate, Gold, and Silver	4,608	12	1
Plums, Dried or Preserved, French Plums and Prunellos	4,899	2	8
Prunes	6,306	2	0
Raisins	123,334	0	9
Spirits, Colonial and Foreign:—			
Rum	1,975,209	0	6
Brandy	1,866,238	0	4
Geneva	80,880	5	7
Of other Sorts	500,121	17	6
Succades and Confectionery, including Fruits and Vegetables preserved in Sugar	2,745	6	0
Sugar, Unrefined	2,984,834	2	11
—— Refined, and Sugar Candy	501,531	16	8
—— Molasses	46,564	7	2
Tea	3,237,545	18	9
Tobacco and Snuff	6,663,227	18	8
Wine	1,586,834	13	9
All other Articles	6,332	17	8
	£20,489,042	11	2
Duties collected on behalf of the Inland Revenue on the delivery for Home Consumption of British Spirits deposited in the Customs Warehouses (under Act 27 & 28 Vict., c. 11)	1,944,702	14	1
Charges on delivery from the Bonded Warehouses	39,923	11	1
Duties collected at the Isle of Man	43,759	9	1
Rents of Legal Quays, Warehouse Rents, &c.	12,490	8	1
Proceeds of Goods sold for the Duties, &c.	6,644	1	10

Customs Duties, contd.	Gross Receipts. £	s.	d.
Fees received under Merchant Shipping Act, Part 2	413	0	0
Moneys received from the Board of Trade in reimbursements of Charges incurred under the Merchant Shipping Act	13,723	7	7
Proceeds of Sale of Premises, Old Stores, &c. &c.	7,486	15	11
Moneys received from the Merchants in respect of the special attendance of Officers given on their application	17,277	14	7
Total	£22,575,463	13	5
Deductions on account of Drawbacks, Repayments on Over Entries, &c.	£2,336,583	18	9
Net Produce	£20,238,879	14	8

Excise Duties.	Gross Receipts. £	s.	d.
Chicory	16,982	11	6¼
Licenses	3,754,356	2	5¼
Malt	7,208,299	9	0½
Race Horses	9,189	19	0
Railways	506,422	14	9½
Spirits	11,923,304	14	2
Sugar	103,359	10	7¼
	£23,521,915	1	7¼
Fines, Forfeitures, and Costs recovered	17,113	11	
Sums received from Contributors to late Scotch Excise Incorporation Fund, per Act 5 & 6 Will. 4, c. 72	369	17	3½
Miscellaneous	11,112	0	2½
Total Excise	£23,550,510	10	2½
Drawback, Discounts and Allowances	£716,603	6	8½
Net Produce	£22,833,907	3	6

Results of Taxation.—The Commissioners of Inland Revenue, in their Annual Report, state that the accounts for the financial year 1870-71—the exact figures of which were not ascertained at the date when they were writing—exhibit a continued prosperity, the payments into the Exchequer having been, for Excise 1,128,000*l.*, and for Stamps 418,000*l.*, in excess of the estimate. The Income Tax realized the exact amount estimated, viz.

6,350,000*l*. The payments in respect of the Land Tax and Inhabited House Duty (including the second moiety of the Assessed Taxes (England) for the year 1869–70) failed to reach the amount estimated by 125,000*l*. This is, to some extent, attributable to arrears not collected and paid over by the 31st March last. Under the head of Excise, chicory, railways, sugar, and licences show an increase over the preceding year (1869–70); in these duties the gross and net receipt generally agree very closely, but in the spirit and malt duty considerable repayments, &c., are made. The gross receipt was, in the case of spirits, 11,913,000*l*., and in that of malt 7,152,000*l*., against 11,426,000*l*. and 6,726,000*l*. respectively for the year 1869-70. The highest gross receipt for each of these duties previously recorded occurred in the year 1866–7, when it reached, for spirits 11,579,000*l*., and for malt 7,072,000*l*. The payment into the Exchequer on account of spirit duty is 460,000*l*., and on malt duty 437,000*l*., in excess of that for the year 1869–70. In comparing the payments on account of stamps with those of the previous year, it must be borne in mind that a loss of 50,000*l*. was caused by the abolition of the newspaper stamp, and that a sum of 442,861*l*. was received in 1869 for Fire Assurance Duty which was repealed in October of that year. But the actual receipts do not fall short of the previous year by more than half the amount above accounted for, showing a recovery to that extent under the other heads of duty. The principal increase occurs in Probate Duty, and amounts to about 100,000*l*. Two large payments, one of 46,500*l*. and the other of 25,500*l*., for property valued at 3,200,000*l*. and 1,800,000*l*. respectively have furnished the greatest part of this addition to the Revenue. The loss under the head of deeds and other instruments in consequence of the reductions in the stamp duties which took effect from the 1st of January will be about 40,000*l*., a fair approximation to the estimate of 200,000*l*. loss in the year.

COINAGE OF 1870.—The Return of the coinage of 1870 shows only 1,822,680 sovereigns and 981,408 half-sovereigns of the value together of 2,313,384*l*., which is but half the annual average coinage of gold. An unusually large coinage of gold, however, had been completed in August, 1869, and there has been a large coinage of gold in the present year. The silver coinage of the year 1870 was of the value of 336,798*l*., and exceeded the average. It comprised 1,976,040 florins, 1,908,720 shillings. 1,054,440 sixpenses, 4,158 fourpences (Maundy money), 1,398,408 threepences, 4,752 twopences, and 7,920 pence, the last two being Maundy money. The bronze coinage of the year consisted of 5,698,560 pence and 4,300,000 halfpence.

STAMPS.—The following table gives the gross receipts from stamps in the United Kingdom during the financial year ended the 31st of March, 1871:—

	Gross Receipts. £	s	d.
Deeds and other Instruments, not included under the following heads	1,678,218	1	10¾
Probates of Wills and Letters of Administration	1,989,318	11	10
Bills of Exchange	775,890	4	9
Bankers' Notes	1,360	0	0
Composition for the Duties on the Bills and Notes of the Banks of England and Ireland, and of Country Bankers	134,626	15	1
Receipts, Drafts and other 1*d*. Stamps	628,908	10	5
Marine Insurances	100,438	17	6
Licenses and Certificates	131,415	6	11
Newspapers and Supplements	52,294	17	5
Medicine	71,343	5	0
Legacies and Successions	2,963,372	10	3
Gold and Silver Plate	62,466	12	7
Cards	12,667	10	6
Patents for Inventions	118,839	5	0
	£8,721,160	9	1¾
Fee Stamps, viz.:			
Admiralty Court	7,549	15	0
Bankruptcy Court	46,047	2	1
Chancery Court	110,165	13	4
Chancery Fund	4,386	8	9
Civil Bill Fund	14,148	13	0
Civil Service Commission	1,599	10	0
Common Law Courts	81,438	11	6
Companies Registration	9,972	17	0
Copyhold, &c., Commission	8,425	17	6
Divorce and Matrimonial Causes	3,233	0	0
Judgments Registry Fund	3,731	1	6
Land Registry	1,097	0	0
Law Fund	9,672	11	8
Naturalisation	320	10	0
Probate Court	148,760	5	11
Public Record	489	0	0
Record of Title	25	10	0
Registration of Deeds	11,101	7	0
Penalties in Law Proceedings and Costs recovered	11,950	7	6
Miscellaneous	904	18	7½
Gross Total	£9,196,140	9	6¼
Drawbacks, Discounts, Allowances, &c.	£216,411	12	11¼
Net Produce	£8,979,728	16	7

PRODUCE OF THE INCOME TAX FOR EACH PENNY IN THE £.—The Commissioners of Inland Revenue in their Annual Report afford some information as to the actual produce of Income Tax for each penny in the £. In the year 1867-8 the total sum charged, in the first instance, on the assessments for that year was 7,586,989*l.*; the amount discharged on appeal or otherwise was 330,277*l.*, and therefore the net amount payable was 7,256,712*l.* The rate of duty being 5*d.* in the £, it follows that each penny produced 1,451,342*l.* By the same process we find that in the ensuing year each penny produced 1,456,500*l.*, and in the year 1869-70, 1,299,351*l.*

NATIONAL DEBT.—The following table shows the annual charge on the total amount of the Unredeemed Funded Debt for the Financial Year ended the 31st of March, 1871:—

Great Britain.	Annual Charges. £	s.	d.
Unredeemed Capital . .	21,053,600	7	0
Annuities, per 18 Vict., c. 18, expiring 5 April, 1885 . . .	116,000	0	0
Annuities, per 23 & 24 Vict., c. 109, and subsequent Acts, expiring 5 April, 1885 (Fortifications) . .	406,757	0	0
Annuities, per 26 Vict., c. 14, expiring 5 April, 1885 . . .	9,983	7	3
Annuities, per 32 & 33 Vict., c. 59, expiring at various dates in 1885 (payable yearly)	2,412,277	0	0
Annuities for a limited Term of Years, per 10 Geo. 4, c. 24, and 3 Will. 4, c. 14, expiring at various periods	51,298	10	0
Red Sea Telegraph Company's Annuity, 25 & 26 Vict., c. 39.	36,000	0	0
Life Annuities, 48 Geo. 3, c. 142, and subsequent Acts . . .	957,581	18	8
Life Annuities, 18 & 19 Geo. 3, and English Tontine Annuities, 29 Geo. 3	12,227	7	0
Irish Tontine Annuities, 13 & 14, 15 & 16 and 19 & 20 Geo. 3 (Irish Acts), payable in Great Britain. .	15,830	11	0
Management	213,846	9	10
Total Debt at 31st March, 1870 . .	25,285,402	10	9

Great Britain, contd.	Annual Charges. £	s.	d.
Debt created or transferred from Ireland between 31st March 1870 and 31st March, 1871:—			
Capital transferred from the Funded Debt in Ireland to the Funded Debt in Great Britain, 5 Geo. 4, c. 53.	32,287	3	2
Capital raised and inscribed for the purposes of the Telegraph Acts, 1868-69, per 32 & 33 Vict,, c. 73, ss. 13 and 15.	9,000	0	
Capital retransferred from the Commissioners for the Reduction of the National Debt, the Dividends upon which had remained unclaimed 10 years and upwards, the same having been reclaimed by the proprietors thereof 56 Geo. 3, c. 60. . .	1,533	14	10½
Annuities for terms of Years (expiring at various periods of the year 1885), granted per Act 29 Vict., c. 5, in lieu of Stock, held on account of Post Office Savings Banks, cancelled (as per contra) . . .	553,887	0	0
Annuities for a limited Term of Years, granted per 10 Geo. 4, c. 24.	3,799	4	6
Annuities (expiring 1885), granted per Act 30 & 31 Vict., c. 145 (Fortifications)	13,328	0	0
Life Annuities, granted per 10 Geo. 4, c. 24, 3 Will. 4, c. 14, and 16 & 17 Vict., c. 45. .	48,128	7	0
Contributors' Shares, Tontine 1789, increased	282	18	6
Total Debt created or transferred in Great Britain, between 31st March, 1870, and 31st March, 1871 . .	662,246	8	0½
General Total, Great Britain .	£25,947,648	18	9½

Ireland.	Annual Charges. £	s.	d.
On 31st March, 1870:—			
Unredeemed Capital .	1,158,753	17	2¾
Management	10,797	14	5
Total Debt at 31st March, 1870 .	£1,169,551	11	7¾
To Capital transferred from the Funded Debt in Great Britain to the Funded Debt in Ireland, 5 Geo. 4, c. 53 . . .	11,195	16	10¾
To Capital retransferred from the Commissioners for the Reduction of the National Debt, the Dividends on which had remained unclaimed 10 years or upwards, the same having been reclaimed by the proprietors, 23 & 24 Vict., c. 71 . . .	25	18	5¼
Total Debt created or transferred in Ireland, between 31st March, 1870 and 31st March, 1871 . . .	11,221	15	4
General Total, Ireland .	£1,180,773	6	11¾

The following statement gives the summary of the charges on account of the National Debt for the financial year ended the 31st of March, 1871:—

	£	s.	d.
Total unredeemed debt on 31st March, 1870:—			
Great Britain	25,285,402	10	9
Ireland	1,169,551	11	7¾
	£26,454,954	2	4½
Debt created or transferred between 31st March, 1870, and 31st March, 1871:—			
Great Britain	662,246	8	0½
Ireland	11,221	15	4
	673,468	3	4½
Total	£27,128,422	5	9¼

National Expenditure from 1857 to 1871.—The following table exhibits the total amount of national expenditure in each of the fourteen financial years, ended March 31, from 1857 to 1871, together with the proportion of expenditure per head of population of the United Kingdom:—

Years ended March 31.	Amounts of Expenditure.	Proportion of Payments per Head of Population of United Kingdom.		
	£	£	s.	d.
1857	75,588,667	2	14	4
1858	68,128,859	2	8	5
1859	64,663,882	2	5	8
1860	69,502,289	2	8	8
1861	72,792,059	2	10	8
1862	71,116,485	2	9	11
1863	69,302,008	2	8	2
1864	67,056,286	2	6	2
1865	66,462,207	2	5	4
1866	65,914,357	2	4	8
1867	66,780,396	2	4	11
1868	71,236,242	2	7	7
1869	72,069,961	2	9	8
1870	68,864,752	2	4	9
1871	69,548,539	2	5	1

National Revenue from 1857 to 1871.—The following table shows the total gross amounts of the national revenue in each of the fourteen financial years ended March 31, from 1857 to 1871, as well as the proportion of receipts per head of population of the United Kingdom:—

Years ended March 31.	Amounts of Revenue.	Proportion of Receipts per head of Population of United Kingdom.		
	£	£	s.	d.
1857	72,334,062	2	12	1
1858	67,881,513	2	8	3
1859	65,477,284	2	6	3
1860	71,089,669	2	9	10
1861	70,283,674	2	8	11
1862	69,674,479	2	8	3
1863	70,603,561	2	8	4
1864	70,208,964	2	7	9
1865	70,313,437	2	7	7
1866	67,812,292	2	5	7
1867	69,434,568	2	6	5
1868	69,600,218	2	6	2
1869	72,591,991	2	7	9
1870	75,434,252	2	9	3
1871	69,945,220	2	5	4

THE HALFPENNY STAMPS FOR NEWSPAPERS.—By the Act 33 & 34 Vict., c. 32, s. 12, the Stamp Duty on newspapers ceased from the 1st October, 1870. At the same time were introduced halfpenny stamps for newspapers and other printed matter—and Post Cards bearing a halfpenny stamp—both of which the Inland Revenue Department was charged to provide. Up to the 31st of March, 1871, there were issued from that office upwards of 58,000,000 Post Cards, and about 114,000,000 of halfpenny labels and stamped wrappers; of these latter 3,511,000 were impressed on paper, supplied by the public under certain regulations. Contrary to expectation, the quantity of paper sent in by the public to be stamped on wrappers was very small, the number of stamps impressed being only about 10 per cent. of wrappers supplied by the Inland Revenue Office.

The following is the official account of Halfpenny Postage Labels, &c., issued to the Post Office and to Stamp Distributors during the Six Months ended the 31st March, 1871:—

	Number.	Duty.
		£ s. d.
½*d.* postage labels	77,215,680	160,866 0 0
½*d.* post cards	58,485,960	121,845 15 0
½*d.* wrappers, inches. 14 × 5	20,117,620	
,, 12 × 5	9,723,600	
,, 9 × 4	1,793,500	
,, 7 × 4	1,413,700	
	33,048,420	68,850 17 6

ROYAL WOODS, FORESTS, AND LAND REVENUES.—The report of the Commissioners of the Woods, Forests, and Land Revenues of the Crown for the year 1870–71, reviews the proceedings of the 20 years which have now elapsed since the management of these hereditary estates of the Sovereign has been separated from that of Public Works and Buildings. In 1851 these estates in England were dispersed over 32 counties; it has been deemed sound policy to sell outlying lands, with a view of consolidating the Crown estates, and thus diminishing the cost of management. Sales have accordingly been made on favourable terms (exceeding 33 years' purchase where the property was in the occupation of the tenants) to the amount of 1,640,000*l.*, and 1,330,200*l.* has been re-invested in the purchase, in all, of 27,700 acres at little more than 29 years' purchase, the rental of the property so purchased exceeding 45,740*l.* Various improvements have also been executed. About 10,000 acres in the forests and woodlands have been planted: 14,300 acres of land have been underdrained; 44 new farmhouses have been built, and 80 farmhouses altered and improved; 61 new farmsteads have been built, and 154 farmsteads altered and improved; 303 new cottages have been built for labourers, and 210 cottages have been altered and improved. The net receipts from woods, forests, and land revenues (excluding the Royal parks and garden transferred to the Commissioner of Works by the Act 14 and 15 Victoria, cap. 42) amounted in the year 1850–51 to 253,628*l.*, and in 1870–71 to 365,377*l.*, an increase of 44 per cent. The cost of management in the year 1870–71 is thus compared with the revenue:—The receipts from Windsor Great Park and woods (sales of produce, &c.) amounted to 4,782*l.*, and the expenditure was 22,490*l.*, whereof 5,657*l.* was for new buildings and works; this park and the estates at Ascot, Bagshot, and Virginia Water, altogether about 14,000 acres, are maintained as part of the domain attached to the residence of the Sovereign, and cannot be regarded as matter solely of profit and loss. The year's receipts from the Royal forests and woodlands (from sales of produce, rents, &c.) amounted to 40,823*l.*; the expenditure was 24,660*l.*—viz., 19,597*l.* for maintenance and management, and 5,063*l* for drainage, planting, and other new works. Excluding the land belonging to individuals over which the Crown possesses no rights whatever, or merely a bare forestal right, the Royal forests and woodlands, exclusive of Windsor, extend to about 100,000 acres: but little more than half that area yields any return to the Crown. The quantity belonging to the Crown absolutely free from the rights of commoners is not more than one-fifth, or about 20,000 acres, all (except some barren and boggy land) planted or otherwise occupied. Upon the remaining four-fifths, which are subject, when unenclosed, to rights of common, there are in the open forests about 7,000 acres of oak and beech, principally of indigenous growth, and 30,000 acres of young and growing timber planted in inclosures by authority of Acts of Parliament. The trees thus planted in these nurseries for navy timber have none of them attained much more than half their full 100 years' growth; but there is an income derived from the thinnings necessary to make room

for the ultimate crop to arrive at maturity. Lastly, we have the land revenue from manors, farms, houses, and mines, amounting in the year to 400,546*l*. The expenditure was 33,624*l*., or 8¼ per cent., constituted as follows:—Property-tax, ancient stipends, and other fixed charges, 2½ per cent.; works for the improvement and preservation of the estates, 1 per cent.; donations to churches, schools, &c., 1½ per cent.; surveys, local agency, collection, and management, 3 per cent.; miscellaneous charges, one-half per cent. The gross receipts from all three classes of property amounted in the year 1870-71 to 446,152*l*.; the expenditure to 80,775*l*. The expenses of the official establishment of the department and of the Land Revenue Record Office are voted by Parliament; the amount is about 20,000*l*.

COINAGE OF THE ROYAL MINT.—The real value of the coinage issued by the Royal Mint in each of the sixteen years, 1856 to 1870, was as follows:—

		Total. £
1855	..	6,245,264
1856	..	6,476,060
1857	..	5,209,810
1858	..	1,690,359
1859	..	3,305,085
1860	..	3,378,102
1861	..	8,673,232
1862	..	8,337,731
1863	..	7,310,032
1864	..	10,088,860
1865	..	2,926,839
1866	..	5,620,716
1867	..	723,540
1868	..	1,971,068
1869	..	7,469,464
1870	..	2,682,887

STANDARD WEIGHTS AND MEASURES.—The Warden of the Standards, Mr. H. W. Chisholm, states in his report for the year ending March 31, 1871, that there were at that date 79 places in the United Kingdom, counties or boroughs, without legal standard weights as compared with 114 in the previous year, and 57 without legal standard measures as compared with 84 in 1869-70. Alluding to the proposed introduction of the metric system into this country the warden observes that any such compulsory provision could be enforced by penalties on one class alone of the people of this country, viz., those who are liable to the inspection of their weights and measures by authorised officers. The greatest pressure of such a compulsory clause would, therefore, be felt almost exclusively by this class, which forms comparatively but a small portion of the whole population. The expense of changing their weights and measures would itself be a serious matter for them. There is also a larger proportion of the population consisting of persons who use weights and measures in their several business occupations but are not liable to inspection, and these persons would be affected to a certain extent by being compelled to adopt the metric system, although the law provides no machinery for enforcing such a compulsory provision.

TAXES.—The following table gives the gross receipt from taxes in the United Kingdom during the financial year ended the 31st of March, 1871:—

HEADS OF DUTY.	Gross Receipts. £	s.	d.
Land Tax on Lands and Tenements . .	1,104,540	8	7
Duties on Offices and Pensions	672	6	0
Assessed Taxes.			
Schedules:			
B. Inhabited Houses .	1,129,451	5	1¾
C. Servants	101,953	2	6
D. Carriages	178,925	5	2
E. Horses for Riding .	117,949	10	6
F. Other Horses and Mules . . .	68,191	0	0
H. Horse Dealers . .	6,594	7	0
I. Hair Powder. . .	408	0	0
K. Armorial Bearings.	29,419	7	2
Additional 10 per Cent. per Act 3 Vict., c. 17	659	8	0
Penalties in Law Proceedings and Costs recovered	686	12	2
Miscellaneous	407	18	4½
Total Land and Assessed Taxes . .	£2,739,858	10	7¼
Allowances and Repayments, &c. . . .	£14,646	14	9¼
Net Produce . . .	2,721,211	15	10
PROPERTY and INCOME TAX	6,419,595	2	3¼
Allowances and Repayments	128,983	15	2½
Net Produce . . .	£6,290,611	7	1¼
Total Net Produce of Taxes	£9,015,823	2	11¼

2. GENERAL COMMERCE AND NAVIGATION.

IMPORTS INTO THE UNITED KINGDOM.—The following table gives the quantities of the chief articles imported into the United Kingdom in the year ended the 31st of December, 1870:—

Imports.		
Animals:—		
Oxen, Bulls, Cows, and Calves	No.	202,172
Sheep and Lambs	,,	669,905
Bacon and Hams	Cwts.	567,164
Beef	,,	215,748
Bones, except Whalefins	Tons	94,923
Brimstone	Cwts.	1,065,360
Bristles	Lbs.	2,497,122
Butter	Cwts.	1,159,210
Candles, Stearine	,,	78,996
Caoutchouc	,,	152,118
Cheese	,,	1,041,281
Clocks and Watches:—		
Clocks	No.	255,861
Watches	,,	223,137
Cocoa	Lbs.	14,793,950
Coffee:—		
From British Possessions	,,	127,779,787
From Foreign Countries	,,	52,122,077
Total of Coffee	,,	179,901,864
Corn, Wheat	Cwts.	30,901,229
—— Barley	,,	7,217,327
—— Oats	,,	10,830,630
—— Maize	,,	16,756,783
—— Flour of Wheat	,,	4,803,909
Cotton, Raw	,,	11,949,157
Cotton Manufacturers of Europe	Val. £	1,144,922
Dyeing (or Tanning) Stuffs:—		
Cochineal, Granilla, and Dust	Cwts.	47,790
Cutch and Gambier	Tons	24,996
Garancine	Cwts.	42,195
Indigo	,,	79,255
Madder	,,	37,820
Madder Root	,,	135,498
Shumac	Tons	14,431
Valonia	,,	25,781
Eggs	No.	430,842,240
Fish	Cwts.	815,671
Flax and Hemp:—		
Flax, Dressed and Undressed	,,	1,998,494
Tow or Codilla of Flax and Hemp	,,	432,116
Hemp and other like Substances (except Jute), Dressed and Undressed	,,	1,057,514
Jute	,,	2,376,690
Flowers, Artificial	Val. £	266,502
Fruits:—		
Apples, Raw	Bush.	678,468
Currants	Cwts.	813,763
Raisins	,,	365,418
Oranges and Lemons	Bush.	1,933,421
Glass of all Kinds (except Bottles of Green or Common Glass)	Cwts.	581,888
Guano	Tons.	280,311
Gutta-percha	Cwts.	33,514
Hair:—		
Goats' Hair or Wool	Lbs.	3,078,506
Manufactures of Hair and of Goats' Wool	Val. £	54,762
Hides, Tanned and Untanned	Cwts.	1,302,232
Hops	,,	127,853
Jute. See Flax and Hemp		—
Lard	,,	217,696
Leather Gloves	Pairs	10,896,432
Metals:—		
Copper Ore and Regulus	Tons.	106,632
Copper, Unwrought and part Wrought	Cwts.	590,060
Iron, in Bars, Unwrought	Tons	72,882
Iron and Steel Wrought or Manufactured	Cwts.	299,820
Lead, Pig and Sheet	Tons	58,634
Silver Ore	,,	4,563
Tin, in Blocks, Ingots, Bars, or Slabs	Cwts.	94,307
Zinc, Crude, in Cakes	Tons	19,872
—— Rolled, but not otherwise Manufactured	,,	8,854
Oil, Fish	Tuns	19,706
— Palm	Cwts.	868,270
— Cocoa Nut	,,	198,602
— Olive	,,	23,202
— Seed	,,	13,429
— Turpentine	Cwts.	90,178
Oil Seed Cake	Tons	158,211
Paper, for Printing or Writing	Cwts.	173,616
Petroleum, Unrefined	Galls.	507,276
—— Refined	,,	6,352,109
Pork	Cwts.	257,014
Potatoes	,,	771,903
Pyrites of Iron or Copper, or Sulphur Ore	Tons	411,512
Rags and Paper-making Materials:—		
Rags	,,	22,394
Esparto, &c.	,,	110,140
Rice	Cwts.	4,077,548
—— in the Husk	Qrs.	98,178
Rosin	Cwts.	698,032
Saltpetre	,,	295,538
—— Cubic Nitre	,,	1,132,647
Seeds:—		
Clover	,,	155,673
Cotton	Tons	120,304
Flax and Linseed	Qrs.	1,490,695
Rape	,,	551,107

Imports.		
Silk Knubs or Husks and Waste	Cwts.	31,360
Silk, Raw	Lbs.	6,307,575
—— Thrown	,,	283,723
Silk Manufactures:—		
Of Europe—Broad Stuffs	,,	3,963,640
—— Ribbons	,,	1,675,573
Of India — Bandannas, Corahs, Choppas, Tussore Cloths, Romals, Taffaties, and Pongees	Pieces	97,583
Skins:—		
Sheep, Undressed	No.	5,179,806
—— Tanned, Tawed or Dressed	,,	2,800,888
Lamb, Undressed	,,	825,138
—— Tanned, Tawed or Dressed	,,	162,120
Seal, in the Hair, Undressed	,,	731,913
Goat, Undressed	,,	713,679
—— Tanned, Tawed or Dressed	,,	2,774,180
Spices:—		
Cassia Lignea	Lbs.	875,991
Cinnamon	,,	2,215,434
Cloves	,,	1,089,667
Nutmegs	,,	537,978
Pepper	,,	19,339,491
Spirits:—		
Rum	Pf. Gals.	6,915,117
Brandy	,,	7,942,965
Other Foreign and Colonial Spirits	,,	2,403,529
Total of Spirits	,,	17,261,611
Sugar, Refined and Sugar Candy	Cwts.	1,710,176
—— Raw:		
Of or from British Possessions	,,	4,579,646
Of or from Foreign Countries	,,	8,218,985
Total of Sugar, raw	,,	12,798,631
Sugar, Molasses	,,	795,111
Tallow	,,	1,523,298
Tea	Lbs.	141,020,767
Teeth, Elephants', Sea-Cow, Sea Horse, or Sea Morse	Cwts.	12,590
Timber and Wood:—		
Not Sawn or Split:		
Of Foreign Countries	Loads	938,959
Of British Possessions	,,	469,816
Total, not Sawn or Split	,,	1,408,775
Sawn or Split:		
Of Foreign Countries	,,	1,904,677
Of British Possessions	Loads	781,854
Total, Sawn or Split	,,	2,686,531
Teak	,,	17,038
Staves	,,	71,673
Mahogany	Tons	32,732
Tobacco, Manufactured, Cigars, and Snuff	Lbs.	3,235,215
—— Unmanufactured	,,	45,557,887
Wine	Gals.	17,774,781
Wool,—Sheep, Lamb Alpaca, and the Llama Tribe	Lbs.	263,250,499
Woollen Rags, torn up, to be used in Wool	Tons	9,474
Woollen Manufactures, not made up	Val. £	3,256,313
Woollen and Worsted Yarn:—		
Berlin Wool and Yarn used for Fancy Purposes	Lbs.	611,013
Yarn for Weaving	,,	9,683,402
Yeast, Dried	Cwts.	128,641

EXPORTS OF HOME PRODUCE FROM THE UNITED KINGDOM.—The following table shows the quantities of the chief articles of British and Irish produce and manufactures exported from the United Kingdom in the year ended the 31st of December, 1870:—

Exports.		
Alkali—Soda	Cwts.	3,857,140
Arms and Ammunition:—		
Firearms (Small)	No.	494,356
Gunpowder	Lbs.	17,313,165
Bacon and Hams	Cwts.	74,498
Bags, Empty	Dozs.	2,477,735
Beef and Pork	Cwts.	42,013
Beer and Ale	Brls.	521,054
Books, Printed	Cwts.	54,089
Butter	,,	57,499
Candles, Stearine	Lbs.	3,349,983
Carriages	No.	5,419
Cement	Cwts.	3,008,889
Cheese	,,	25,208
Coals, Cinders, and Culm	Tons.	11,495,092
Cordage and Twine	Cwts.	126,621
Corn: Wheat	,,	923,953
—— Wheat Flour	,,	200,148
Cotton Yarn	Lbs.	186,386,730
Cotton Manufactures:		
Piece Goods, White or Plain	Yds.	2,301,064,579
—— Printed, Checked, or Dyed	,,	964,802,064
Total of Piece Goods	,,	3,265,866,643
Stockings	Doz. Prs.	866,841
Thread for Sewing	Lbs.	7,272,858

Exports.		
Fish: Herrings	Brls.	602,617
Glass: Flint	Cwts.	107,989
—— Window	,,	77,340
—— Common Bottles	,,	614,316
Hats of all Sorts	Dozs.	338,359
Horses	No.	7,202
Leather, Tanned, Unwrought	Cwts.	102,368
—— Wrought, Boots, and Shoes	Prs.	4,447,836
—— other Sorts	Lbs.	1,392,896
Linen Yarn	,,	37,122,747
Linen Manufactures:		
White or Plain, Damask, &c.	Yds.	211,759,236
Printed, Checked, or Dyed	,,	11,003,392
Sailcloth	,,	3,694,053
Total of Piece Goods	,,	226,456,681
Thread for Sewing	Lbs.	2,375,798
Metals:		
Iron, Pig, and Puddled	Tons.	752,681
—— Bar, Angle, Bolt, and Rod	,,	322,100
—— Railroad, of all Sorts	,,	1,060,123
—— Wire	,,	23,123
—— Cast	,,	101,168
—— Hoops, Sheets, and Boiler Plates	,,	180,261
—— Wrought of other Kinds	,,	135,229
—— Old, for remanufacture	,,	106,859
—— Steel, Unwrought	,,	34,911
Total of Iron and Steel	,,	2,716,455
Copper, Unwrought:—		
Ingots, Cakes or Slabs	Cwts.	219,518
—— Wrought or partly Wrought:—		
Bars, Rods, Sheets, Nails, &c.	,,	285,148
Mixed or Yellow Metal	,,	244,676
Of other Sorts	,,	19,935
Brass of all Sorts	,,	57,007
Lead, Pig, Sheet, Pipe, and Shot	Tons	51,143
—— Ore, Red and White Lead, and Litharge	,,	9,989
Tin, Unwrought	Cwts.	102,816
—— Plates	,,	2,001,575
Zinc, Wrought and Unwrought	,,	146,577
Oil, Seed	Gals.	9,741,586
Paper (other than Hangings	Cwts.	173,760
Salt	Tons	769,616
Silk, Thrown	Lbs.	676,804
—— Twist and Yarn	,,	204,846

Exports.		
Silk Manufactures:—		
Broad Piece Goods	Yds.	3,846,675
Handkerchiefs and Shawls	Dozs.	105,986
Ribbons	Lbs.	88,238
Soap	Cwts.	157,090
Spirits, British	Galls.	1,448,453
Sugar, Refined	Cwts.	565,426
Wool, Sheep and Lambs	Lbs.	9,026,321
Woollen and Worsted Yarn	,,	36,581,809
Woollen and Worsted Manufactures:—		
Cloths, Coatings, &c., Unmixed and Mixed	Yds.	32,540,138
Flannels, Blankets, Blanketing, and Baizes	,,	15,001,546
Worsted Stuffs, Unmixed and Mixed	,,	236,062,300
Carpets and Druggets	,,	9,377,676

EXPORTS OF FOREIGN AND COLONIAL PRODUCE FROM THE UNITED KINGDOM.—The following table gives the quantity of the exports of foreign and colonial merchandize from the United Kingdom, in the year ended the 31st of December, 1870:—

Bark, Peruvian	Cwts.	12,785
Caoutchouc	,,	50,737
Cocoa	Lbs.	4,453,876
Coffee, from British Possessions	,,	101,035,394
—— Foreign Countries	,,	43,785,916
Total of Coffee	,,	144,821,310
Corn, Wheat	Cwts.	1,093,498
—— Wheatmeal or Flour	,,	372,187
Cotton, Raw	,,	2,112,773
Cotton Manufactures:—		
Piece Goods	Pieces	254,838
Other Articles	Value £	150,039
Dyeing Stuffs:—		
Cochineal Granilla, and Dust	Cwts.	22,620
Indigo	,,	46,279
Madder	,,	454
Madder Root	,,	869
Flax and Hemp:—		
Flax, Dressed and Undressed	,,	50,985
Tow or Codilla of Hemp and Flax	,,	11,846
Hemp and other like Substances (except Jute), Dressed and Undressed	,,	64,236
Jute	,,	425,712
Fruit:—		
Currants	,,	184,432
Raisins	,,	82,526

Exports of Foreign and Colonial Produce.

Guano	Tons	3,370
Hair, Manufactures, of, and of Goats' Wool	Val. £	8,016
Hides, Tanned and Untanned	Cwts.	353,950
Metals:—		
Copper, Unwrought and Part Wrought	Tons	14,484
Iron in Bars	,,	21,283
Spelter or Zinc	,,	2,986
Tin, in Blocks, Ingots, Bars, or Slabs	,,	1,097
Oil, Palm	Cwts.	284,204
— Cocoa Nut	,,	145,555
— Olive	Tuns	2,168
Opium	Lbs.	150,414
Quicksilver	,,	2,968,390
Rice, not in the Husk	Cwts.	2,221,520
Saltpetre	,,	38,944
—— Cubic Nitre	,,	120,640
Seeds, Flax and Linseed	Qrs.	33,200
—— Rape	,,	229,276
Silk, Raw	Lbs.	2,644,402
— Thrown	,,	39,771
Silk Manufactures: Bandannas, Corahs, Choppas, Tussore, Cloths, Romals, Taffaties and Pongees	Pieces.	11,518
Spices, Cinnamon	Lbs.	1,558,662
—— Pepper	,,	12,054,946
Gallons Spirits:—		
Rum	Proof	1,334,358
Brandy	,,	347,492
Geneva, and other Foreign and Colonial Spirits	,,	1,789,137
Total of Spirits		3,470,987
Sugar, Foreign, Refined, and Candy	Cwts.	32,568
—— Unrefined	,,	363,028
—— Molasses	,,	44,505
Tea	Lbs.	30,354,376
Teeth, Elephants', Sea Cow, Sea Horse, or Sea Morse	Cwts.	4,202
Tobacco Stemmed	Lbs.	492,170
—— Unstemmed	,,	10,013,023
—— Manufactured, viz:—		
Cigars	,,	262,865
Other Sorts	,,	1,228,277
Wine	Gallons	1,682,524
Wool, Sheep, Lamb, Alpaca, and Llama	Lbs.	92,542,384

Export Markets of the United Kingdom.—The following table compiled from returns of the Board of Trade gives the declared real value of British and Irish produce and manufactures exported from the United Kingdom to foreign countries and British possessions in the year ended the 31st of December, 1870:—

I. Foreign Countries.

	£
Russia, Northern Ports	5,748,067
—— Southern Ports	1,245,508
Sweden and Norway	2,014,695
Denmark Proper and Iceland, from 1861	2,023,762
—— Danish West Indies	760,967
Prussia	2,938,687
—— Schleswig and Holstein: with Lauenburg	77,124
—— Hanover	405,239
Hanse Towns	16,898,880
Holland	11,222,496
—— Java, Sumatra, &c.	897,449
Belgium	4,476,513
France	11,645,311
—— Algeria	125,643
—— Possessions in Senegambia	1,123
—— Possessions in India	
Portugal	1,927,190
—— Azores and Madeira	174,352
Spain and the Belearic Islands	2,513,619
—— Canary Islands	235,126
—— Fernando Po	19,426
—— Cuba	2,108,098
—— Porto Rico	416,626
—— Phillipine Islands	775,236
Italy: Sardinia	2,143,716
—— Tuscany	932,425
—— Two Sicilies	1,734,777
—— Venetia	199,050
—— Adriatic Ports of Ancona, and the Romagna	245,920
Papal Ports on the Mediterranean	10,650
Austrian Territories: Illyria, Croatia, and Dalmatia (including Venetia, before 1861)	1,714,179
Greece (including Ionian Islands)	942,739
Turkey	5,900,336
—— Wallachia and Moldavia	559,958
—— Syria and Palestine	1,188,121
Egypt	8,751,766
Morocco	229,146
United States and California	28,334,634
Mexico	911,054
Central America	359,905
Haiti and San Domingo	395,496
New Granada	2,134,883
Venezuela	144,381
Ecuador	57,011
Brazil	5,353,140
Uruguay (Monte Video)	809,525
Argentine Confederation	2,353,676
Chili	2,685,792
Peru	1,766,128
China (exclusive of Hong Kong)	6,138,128
Japan	1,615,392
Western Coast of Africa	903,623
Other Countries	625,304
Total of Foreign Countries	147,792,032

II. British Possessions.

Channel Islands	759,396
Gibraltar	770,105
Malta	1,003,740
North American Colonies:	
British Columbia	73,568
Hudson's Bay Co. Settlements	44,830
Newfoundland	523,721
Canada	4,376,468
New Brunswick	529,203
Prince Edward Island	125,291
Nova Scotia	1,127,540
Total of North American Colonies	6,800,621
West India Islands and Guiana	3,361,736
British Honduras	160,397
Australia:	
West Australia	104,864
South Australia	817,979
Victoria	4,308,517
New South Wales	2,594,854
Queensland	343,924
Tasmania	191,323
New Zealand	1,540,655
Total of Australia	9,902,116
British India	19,308,995
Singapore and the Straits Settlement	2,331,700
Ceylon	907,314
Hong Kong	3,406,632
Mauritius	483,129
Cape of Good Hope and Natal	1,867,374
Possessions on the River Gambia	40,490
Sierra Leone	216,849
Possessions on the Gold Coast	401,483
Other Possessions	126,874
Ports of the Crimea	—
Total of British Possessions	51,848,951
Total of Foreign Countries and British Possessions	199,640,983

Casualties on the Coast in 1870.—The number of wrecks, casualties, and collisions from all causes on and near the coasts of the United Kingdom and in the surrounding seas, reported is 1870, is 1,502, or 612 less than the number reported in 1869, and less than the number reported in any year since 1864, and is 360 below the average of the last five years. The site of every one of the disasters can be clearly traced on the Wreck Chart published with the Register. On analyzing the records of the past 20 years, and dividing them into four periods of five years each, we find that during the years 1851–5 the annual average of wrecks was, 1,068; in the next five years it had increased to 1,252; for the next period of five years the average was 1,538; and, finally, during the five years which ended in 1870 it amounted to the large average of 1,862 wrecks per annum.

The number of ships lost or damaged in the 1,502 wrecks, casualties, and collisions reported as having occurred on or near the coasts of the United Kingdom in 1870 was 1,865, representing a registered tonnage of upwards of 404,000 tons, and having on board crews numbering 16,348 men and boys. The number of ships in 1870 is less than the number in 1869 by 729. The number of ships reported is, as has been formally stated, in excess of the number of casualties reported, because in cases of collision two or more ships are involved in one casualty. Of the 1,865 ships, 1,552 are known to have been ships belonging to Great Britain and its dependencies, with British certificates of registry, and 271 are known to have been ships belonging to foreign countries and states. Of the remaining 42 ships the country and employment are unknown. Of the British registered ships 1,101 were employed in the British coasting trade and 451 were employed in the (over sea) foreign and home trade. Of the ships belonging to foreign countries and states, 14 employed in the British coasting trade met with casualties.

Of the total number of wrecks, &c., 1,502 reported as having occurred on and near the coasts of the United Kingdom in 1870, 361 were collisions, and 1,141 were wrecks and casualties other than collisions. Of these 1,141 wrecks, strandings, and casualties other than collisions, 411 were wrecks, &c., resulting in total loss, and 730 were casualties resulting in partial damage more or less serious. The whole number of wrecks and casualties other than collisions on and near our coasts reported in 1869 was 1,653, or 512 more than the number of wrecks, strandings, and casualties, other than collisions, in 1870.

The loss of life was 774. This is 159 less than the number lost in 1869, and less than in any year since 1865. Nearly one-half of the lives lost were from only ten vessels, the remainder, 394, perishing from 114 other ships. Of these wrecks 99 were laden vessels, 18 were vessels in ballast, and in seven cases it is not known whether the vessels were laden or light. 111 of those ships were entirely lost, and 13 sustained partial damage. Of the 774 lives lost 105 were lost in vessels which foundered, 112 through vessels in collision, and 467 in vessels stranded or cast ashore. The remaining number of lives lost, 90, were lost from various causes, such as by being washed overboard in heavy seas, by explosions, &c. While the greatest number of wrecks, &c., happened on the east coast, the greatest loss of life during the ten years ended 1870, occurred in the Irish Sea. The number of lives saved during the past year is altogether 4,654. Hundreds of these were happily rescued from an inevitable death by the lifeboats of the National Lifeboat Institution, whose sphere of usefulness on our coasts is extending every year. It has now a noble fleet of 230 lifeboats under its management, and

assists every year in the saving of about 800 shipwrecked persons. Altogether this great and national institution has contributed since its establishment to the saving of upwards of 20,000 shipwrecked sailors.

NAVIGATION RETURNS FOR 1870.—The subjoined table shows the number and tonnage of vessels which entered inwards and cleared outwards in the United Kingdom *with cargoes* to and from various countries in the year ended the 31st December, 1870:—

Entered from	Vessels	Tons.	Cleared for	Vessels	Tons.
1. British Possessions:			1. British Possessions:		
In North America	1,814	1,150,328	In North America	1,804	695,406
„ East Indies, including Ceylon, Singapore, and Mauritius	890	815,569	„ East Indies, including Ceylon, Singapore, and Mauritius	1,090	1,008,715
„ Australia	191	183,301	„ Australia	295	285,114
„ West Indies	633	200,155	„ West Indies	484	161,179
„ All other Parts	2,209	454,117	„ All other Parts	2,606	791,482
TOTAL	5,737	2,803,470	TOTAL	5,559	2,941,896
2. Foreign Countries:			2. Foreign Countries:		
Russia—Northern Ports	3,752	1,033,958	Russia—Northern Ports	2,835	809,699
Russia—Southern Ports	1,190	484,149	Russia—Southern Ports	420	203,562
Sweden	4,059	996,645	Sweden	1,737	397,014
Norway	3,665	738,493	Norway	1,702	324,211
Denmark	1,309	165,410	Denmark	3,697	545,801
Prussia	1,497	386,576	Prussia	2,389	597,966
Schleswig-Holstein and Lauenberg	167	52,126	Schleswig-Holstein and Lauenberg	735	93,484
Hanover	151	32,411	Hanover	471	47,505
Hanse Towns	1,352	574,554	Hanse Towns	2,601	946,044
Holland	2,701	726,114	Holland	3,432	879,947
Belgium	2,459	598,168	Belgium	2,704	650,945
France	7,370	1,286,514	France	12,685	2,306,189
Spain	2,114	517,478	Spain	1,982	539,433
Portugal	1,250	264,653	Portugal	1,033	242,541
Italy—Sardinia	276	111,136	Italy—Sardinia	794	359,520
Two Sicilies	294	71,363	Two Sicilies	625	190,125
Austria	118	88,443	Austria	434	193,849
Turkish Dominions including Wallachia and Moldavia	1,046	450,300	Turkish Dominions, including Wallachia and Moldavia	674	297,508
Other European States	371	92,423	Other European States	658	178,199
Egypt	420	322,022	Egypt	796	481,375
United States	1,838	1,823,173	United States	1,867	1,914,107
Mexico, Foreign West Indies, and Central America	778	331,806	Mexico, Foreign West Indies, and Central America	966	385,626
Brazil	567	188,063	Brazil	767	337,523
Peru and Chili	405	311,389	Peru and Chili	352	241,225
Other States in America, Africa, and Asia	1,031	460,838	Other States in America, Africa, Asia	1,356	609,371
TOTAL	30,190	12,108,205	TOTAL	47,712	13,772,769
TOTAL	35,927	14,911,675	TOTAL	53,271	16,714,665

THE PORTS OF THE KINGDOM.—The reduction of the sugar duty last year caused a large decrease in the amount of duties collected at the ports of the United Kingdom. The gross amount collected by the Customs at London in 1870 was 10,017,682*l.*, being a decrease of 466,873*l.*, or above 4 per cent., compared with the

preceding year. The amount collected at Liverpool was 2,723,217*l.*, a decrease of 435,153*l.*, or 13 per cent. But the trade of Liverpool was unusually active and prosperous in 1870. 5,058 vessels were reported inwards, against 4,895 in the preceding year, and 4,778 as against 4,699 cleared outwards; the value of British goods exported rose from 74,882,949*l.* in 1869 to 81,794,578*l.* in 1870; the imports of sugar arose from 2,211,290 cwt. to 2,884,121 cwt.; 61,979 packages of goods, valued at 1,141,755*l.*, were received from other ports under the transit regulations for exportation, as against 22,302 valued at 425,378*l.* in 1869. This transit trade was materially assisted by the war on the Continent; but, independently of this exceptional cause, the general trade of the port is undoubtedly greatly increasing. At the other English ports the gross customs revenue collected in 1870 was 3,131,902., a decrease of 281,125*l.*, or 8 per cent. The collection in Ireland, 1,919,072*l.*, shows a decrease of 176,204*l.*, being also 8 per cent. By far the largest decrease was in the revenue from the Scotch ports the total being 2,577,826*l.*, a decrease of 495,219*l.*, or 16 per cent. The receipts from the sugar trade of the Clyde ports which amounted in 1869 to more than two-thirds of the whole duty collected in Scotland, were of course most seriously affected by the reduction of the duty in 1870. The collectors of the several ports in the three kingdoms state, year by year, the reasons for any increase or decrease of customs revenue. At Bristol, the customs duties received in 1870 amounted to 999,568*l.*, being a decrease of 184,293*l.*, principally owing to the reduction of the duty on sugar, of which, however, the import increased, and the trade has been maintained; here, as at several other ports, there has been a decrease in the receipt from duties in consequence of tea being removed under bond to London and the duty paid there. Gloucester, Hartlepool, and some other ports attribute their decreased receipts to the abolition of the duty on corn. At Hull, the customs amounted to 295,104*l.*, a decrease of 54,100*l.*, owing to the reduction on sugar duties; but the collector reports trade healthy. At several southern ports trade was disturbed by the Continental war; and Southampton shows a decrease of 18,142*l.* owing to this cause and the reduction of sugar duties. Chiefly from this last cause Plymouth had 65,164*l.* less receipt than in 1869. Greenock received 1,094,763*l.* from customs duties in 1870, a decrease of above a quarter of a million, due to the reduction of sugar duty, and notwithstanding an increase of 116 cargoes in the quantity imported. From the same cause and abolition of the corn duty Glasgow received only 804,959*l.* a decrease of 127,531*l.* From causes above mentioned a large proportion of Irish ports show a decrease of revenue—Belfast, Cork, Dublin, the last receiving 871,445*l.*, a decrease of 90,782*l.* The collectors mention also at Belfast a decreased consumption of spirits, and at Londonderry depression of trade, and bonding of spirits in excise warehouses and payment of duty therefrom. Several ports had an increase of revenue in 1870. Chester reports an increase of 8,944*l.*; Exeter, 5,978*l.*; North Shields, 4,206*l.*; Whitehaven, 4,759*l.*; from all of which places the report is that trade is improving. Goole reports an increase of 18,844*l.* from increased trade; Portsmouth, 2,275*l.* from increased consumption of spirits; Newcastle, 34,147*l.* from a steady increase of consumption of tobacco, tea, brandy, and wine; from Dundee the report is that trade is prosperous, and the increase of 1,139*l.* principally on the consumption of tea and sugar; and New Ross has an increase of 1,580*l.* from a larger consumption of tobacco, tea, and coffee. Some ports show in their returns a change in the course of business: Goole reports payment of duties there instead of at Leeds, and Granton a large increase of business, the merchants of Edinburgh having bonded many articles there in preference to Leith.

TRADE BETWEEN ENGLAND AND THE UNITED STATES.—A return has recently been prepared, showing the practical workings of the maritime reciprocity with the United States. The chart has been compiled from the commercial statistics of the United States and the British Empire from 1856 to 1870. The following are the statistics given:—

Year.	Total American tonnage entered at British Empire ports.	Total British tonnage entered at ports of U.S.
1856	2,346,280	935,180
1857	2,184,380	965,570
1858	2,207,496	918,992
1859	2,124,537	1,098,497
1860	2,089,307	1,260,458
1861	2,721,384	1,148,092
1862	2,142,137	1,152,685
1863	1,553,778	1,353,476
1864	1,384,373	1,909,712
1865	1,096,388	1,788,663
1866	1,105,857	2,410,209
1867	1,231,875	2,406,300
1868	1,215,000	2,346,741
1869	1,200,000	3,662,797
1870	1,823,173	2,789,656

Thus it appears that, prior to 1862, the tonnage of American vessels entered at British ports was double the tonnage of British vessels entered at ports in the United States; but that since 1865, the tonnage of British vessels entered at ports in the United States has largely increased, and for some years was double the tonnage of American vessels entered at British ports.

3. TRADE AND AGRICULTURE.

CONSUMPTION OF SPIRITS AND BEER IN THE UNITED KINGDOM IN 1825, 1850, AND 1870.—The following table, prepared in the Inland Revenue Department, shows the number of gallons of British spirits entered for home consumption in the years 1825, 1850, and 1870:—

	England.	Scotland.	Ireland.	United Kingdom.
	Gals.	Gals.	Gals.	Gals.
5 January, 1826	3,684,049	5,981,549	9,262,734	18,928,342
5 January, 1851	9,331,512	7,122,987	7,408,086	23,862,585
31 March, 1871	12,191,386	5,556,993	5,212,746	22,961,125

The annexed table, compiled at the Custom House, shows the quantity of Colonial and Foreign spirits, entered for consumption in the same years:—

	England.	Scotland.	Ireland.	United Kingdom.
	Gals.	Gals.	Gals.	Gals.
Colonial Spirits (Rum):—				
1825	1,980,807	104,752	10,128	2,095,687
1850	2,534,544	201,225	166,295	2,902,064
1870	3,470,022	265,347	116,494	3,851,863
Foreign Spirits:—				
1825	1,348,482	56,554	4,550	1,409,586
1850	1,767,969	87,975	47,168	1,903,112
1870	3,911,232	352,541	329,816	4,593,589

To these tables we may add the following statement of the number of barrels of beer entered for home consumption in the same periods:—

	England.	Scotland.	Ireland.	United Kingdom.
	Brls.	Brls.	Brls.	Brls.
5 January, 1826	8,209,088	353,519	—	—
5 January, 1851	14,057,514	487,672	580,589	15,125,775
31 March, 1871	22,750,650	989,138	1,597,023	25,336,811

The duty on beer (which was repealed in 1830) did not extend to Ireland.

The number of barrels returned for the years 1850 and 1870 are estimated from the quantities of malt and sugar used in brewing, allowance being made for the number of barrels exported on drawback.

HOME-MADE SPIRITS.—The returns of the Inland Revenue Department show that the quantity of spirits charged with duty in the United Kingdom in the financial year ended 31 March, 1870, was 22,855 229 gallons, being 924,839 gallons in excess of the previous year. The quantity consumed was 21,980,678 gallons being an increase of 872,756 gallons on the year 1868-9. The increase in the consumption in the respective countries stands as follows:—in England, 352,383 gallons or 3·1 per cent.: in Scotland, 337,452 gallons, or 6·7 per cent.; and in Ireland, 182,921 or 3·7 per cent. The quantity of foreign spirits unenumerated, not being sweetened or mixed, entered for home consumption in the year 1869–70, was 150,000 gallons less than in the previous year. This is a remarkable circumstance, as, from the time of the introduction of this class of spirits as a substitute for ordinary British raw grain spirit, there has been heretofore a steady increase in the quantity used. The consumption in the financial year 1870–71, has considerably exceeded that of any year since 1860. This increase is not confined to any particular part of the kingdom, but is spread over the whole; the proportion, however, is greatest in Ireland, and is greater in Scotland than in England, and it may be mentioned that concurrently therewith, there has also been a small increase in the latter half of the year in the quantity of foreign plain spirits entered for home consumption.

AGRICULTURE OF GREAT BRITAIN.—The following table from the Board of Trade Returns shows the acreage under each principal crop, with the number of live stock returned in Great Britain, in the year 1870;—

Principal Crop.	Acres.
Wheat	3,500,543
Barley or bere	2,371,739
Oats	2,763,300
Potatoes	587,661
Turnips and swedes	2,210,911
Clover, &c., under rotation ..	4,504,884
Live Stock.	Number.
Cattle (exclusive of horses) ..	5,403,317
Sheep	28,397,589
Pigs (exclusive of those kept in towns and by cottagers with less than a quarter of an acre of land)	2,171,138

SHEEP.—The extreme dryness of the weather and consequent shortness of food for sheep naturally led to the return of a smaller return of that kind of live stock in 1870 as compared with previous years. The total number of sheep returned for the United Kingdom in 1870 was less by 1,464,000 than in 1869, by 2,821,000 than in 1868, and by 1,031,000 than in 1867. The decrease of sheep in Great Britain in 1870, as compared with the three previous years, was 1,141,000, 2,314,000, and 522,000 respectively. In Ireland the number of sheep in 1870 was less by 314,000 than in 1869, by 488,000 than in 1868, and by 492,000 than in 1867.

PIGS.—The number of pigs in the United Kingdom in 1870 shows an increase upon the reduced stock of the two previous years, but it was below the number returned in 1867. In the United Kingdom in 1870 there was an increase in the number of pigs of 622,000 over 1869, and of 461,000 over 1868, but there was a decrease of 571,000 in comparison with 1867. In Great Britain the stock of pigs in 1870 was larger than in 1869, but it was smaller than in 1868 and 1867. In Ireland in 1870 the stock of pigs showed a large increase over each of the three previous years. This description of live stock fluctuates in number very much, according to the prices of appropriate feeding stuffs.

LIVE STOCK.—The total number of each kind of live stock in the United Kingdom upon the 25th of June, 1870, was: horses about 2,580,000, of which Great Britain possessed about 2,050,000 (including horses liable to duty), and Ireland 530,000; cattle, 9,235,000, of which 5,403,000 were in Great Britain, and 3,796,000 in Ireland; sheep, 32,786,000, of which the number in Great Britain was 28,397,000, and in Ireland 4,333,000; and pigs, 3,650,000, of which Great Britain had 2,171,000 (exclusive of pigs kept in towns, and by cottagers having less than a quarter of an acre of land), and Ireland 1,459,000.

HORSES.—The returns of the number of horses in Great Britain in 1870 given by the Board of Trade differ in an important respect from those supplied for 1869. In 1869, all kinds of horses belonging to occupiers of land were returned, and an estimate was made of the total number in towns; but in 1870 it was considered that the total number of horses in Great Britain could be ascertained by means of the agricultural returns and the licenses issued for horses, if the returns were confined to the number of horses exempt from duty. Accordingly only the number of horses used solely for agriculture and by market gardeners, and the number of unbroken horses, and the number of mares kept only for breeding, were specified in the forms for the agricultural returns of Great Britain in 1870. The total number of horses returned under these headings in 1870 amounted in England to 977,707; in Wales to 116,131; and in Scotland to 172,871; making a general total for Great Brit. in of 1,266,709. Of this total, 965,515 were horses used solely for agriculture and by market gardeners, and 391,194 were unbroken horses, and mares kept for breeding, the latter amounting to 38,141. The total number of licenses issued for horses in the year 1870, was for England and Wales 770,306; for Scotland 70,902, making a total of 841,208 for the whole of Great Britain. Thus the agricultural returns and the licenses issued show a total of 2,107,709 horses; but as some horses, used partly in agriculture and liable to duty, may have been included both in the agricultural returns and in the number of licenses, and as two or more licenses may have been taken for the same horse, upon changes of ownership, some deduction must be made from the total number just stated. The total number of horses in Great Britain may probably be taken at 2,050,000. The number of horses returned to Ireland in 1870 was 531,306, which makes a total for the United Kingdom of 2,581,306 horses.

CATTLE.—The total number of cattle returned in the United Kingdom was greater in 1870 by 157,000 than in 1869; by 152,000 than in 1868; and by 504,000 than in 1867. In Great Britain the number of cattle returned in 1870 was 90,000 above 1869. 21,000 above 1868, and 410,000 above 1867. In Ireland in 1870, 69,000 more cattle were returned than in 1869, 176,000 more than in 1868, and 94,000 more than in 1867.

THE CATTLE TRADE.—During the year 1870 there were brought to the ports of the United Kingdom 145,737 oxen and bulls, 24,910 cows, 31,525 calves, 651,138 sheep, 18,767 lambs, 95,624 swine and hogs; making an aggregate number of 967,701. More than half arrived by the port of London; 181,285, the bulk of them sheep, were landed at Harwich; then follow in the list the ports of Hull, Newcastle, Hart-

lepool, Grimsby, Southampton. The largest importation was in the year 1865, when no less than 914,170 sheep and lambs were imported into the United Kingdom, and 283,271 oxen, bulls, cows, and calves.

FOREIGN SUPPLIES OF GRAIN AND FLOUR.—It appears from a return issued by the Board of Trade that during the year 1870 the total quantity of wheat (grain and flour), in the equivalent weight of grain, imported into the United Kingdom was 36,906,115 cwt., the calculation being based on the principle that 1 cwt. of wheat flour is equal to 1¼ cwt. of grain. The following table, for the years 1869-70, will show the sources from which the supply was derived, and the variations in the quantity received from the different nations in the two years:—

COUNTRIES.	1869.	1870.
	Cwts.	Cwts.
Russia, Northern Ports	1,836,674	1,866,299
——— Southern Ports	7,350,562	8,460,545
Sweden	62,955	37,322
Denmark, including the Duchies from 1856 to 1860	779,884	580,243
Prussia	4,967,527	2,656,927
Duchies of Schleswig and Holstein, with Lauenburg	313,408	244,832
Hanse Towns	1,545,422	1,127,595
Germany (Other Parts)	720,331	458,419
Holland	205,760	26,308
France	2,153,350	1,060,120
Spain	43,151	8,395
Italy:		
Venetia	6,261	6,498
Illyria, Croatia, and Dalmatia	1,345,786	463,683
Wallachia and Moldavia	990,611	132,382
Turkish Dominions	1,396,328	361,164
Egypt	1,020,289	106,701
British North America	3,396,511	3,402,690
United States	15,320,257	15,057,236
Chili	580,349	643,347
Other Countries	412,356	205,409
Total.	44,447,772	36,906,115

CULTIVATED LAND.—According to a return published by the Statistical Department of the Board of Trade, the land under cultivation during the present year may be divided as follows:—Wheat 3,575,995 acres, barley 2,387,719, oats 2,719,3-8, potatoes 628,287, hops 60,028. This shows, as compared with the year 1869, an increase of 75,453 acres upon wheat, 15,980 upon barley, and 40,626 upon potatoes; and a decrease of 43,992 upon oats, and 566 upon hops. According to the same return the number of live stock in Great Britain on the 25th June last was—cattle 5,339,332, sheep 27,132,898, and pigs 2,499,889. Compared with last year, there was a decrease of 63,985 on cattle and 1,264,691 on sheep, and an increase of 328,751 on pigs.

MALT.—The number of bushels of malt charged with duty in 1870 was, in England 45,351,518; in Scotland 2,380,545; and in Ireland 2,965,396; total 50,697,459. The amount of duty charged was, in England 6,150,800*l.*; in Scotland 321,761*l.*; and in Ireland 401,908*l.*; giving a total for the United Kingdom of 6,874,469*l.*

IMPORTATION OF CORN.—The import of corn into the United Kingdom between the last and the present harvest (from the 1st of September, 1870, to the 31st of August, 1871) has been as follows:—Wheat, 34,744,046 cwt., equal to 8,017,856 qrs., showing a decrease of 586,421 qrs. as compared with the preceding twelvemonth, from the 1st of September, 1869, to the 31st of August, 1870; wheat flour, 4,391,672 cwt., or 1,242,820 qrs., a decease of 381,788 qrs.; barley, 7,067,092 cwt., or 1,978,785 qrs., a decrease of 201,095 qrs.; oats 10,460,616 cwt., or 3,803,869 qrs., a decrease of 362, 786 qrs.; peas, 986,381 cwt., or 219,106 qrs., a decrease of 222,180 qrs.; beans, 2,191,921 cwt., or 511,449 qrs., an increase of 115,773 qrs.; Indian corn, 16,374,862 cwt., or 3,820,801 qrs., a decrease of 289,646 qrs. The total importation of these articles amounted to 16,956,703 qrs. in the year ending 31st August, 1869, 21,522,919 qrs. in the year ending 31st August, 1870, 19,594,776 qrs. in the year ending 31st August, 1871; but these numbers show the imports without deduction for the exports of corn from this country; the whole was not consumed here.

THE MEAT SUPPLY OF THE UNITED KINGDOM.—The live stock census in 1870 gave us 9,235,052 cattle of all ages, 32,786,784 sheep of all ages, and 3,650 730 pigs of all ages, representing, according to the estimate adopted, a production of 659,646 tons of beef and veal, 409,834 tons of mutton and lamb, and 151,145 tons of pork and bacon, or a total of 1,220,625 tons of meat. The imports of 1870 were 202,175 cattle and calves, 669,905 sheep and lambs, and 95,624 pigs; or, in other words, 45,127 tons of beef and veal, 14,953 tons of mutton and lamb, and 3,842 tons of pork and bacon, making a total live importation of 63,922 tons. The dead, salted, and preserved meat received from abroad in the same year was 57,743 tons. Thus the meat supply of the United Kingdom last year amounted to 1,342,290 tons (including 5,825 tons of British and Irish beef, pork, bacon, and hams, and 1,147 tons of foreign and colonial bacon and hams exported), of

which 63,922 tons, or 4¾ per cent., were imported as live animals.

THE IMPORTATION OF WHEAT.—The rapid increase in the importations of corn into Great Britain is surprising. It appears that the average number of people fed by foreign wheat in each year for the period of ten years ending 1850 was 3,500,000, and the corresponding figures for each year of the nine last in the table are 8,600,000. It appears, too, that free trade was the turning point in the history of our agricultural production. Since 1850, the home growth of wheat has steadily diminished, it maintained only 15,400,000 people on the average of the past nine years, compared with 16,000,000 then.

SUGAR DUTIES.—Returns relating to the sugar duties, and the mode of assessing them, have been laid before the House of Commons. The gross amount of duty actually received upon refined and raw sugar and molasses entered for home consumption in the United Kingdom in the financial year 1870–1 was 3,532,930*l*., under the classified rates of duty; and the drawbacks paid on British refined sugar exported amounted to 231,821*l*. At one uniform duty of 4*s*. 8*d*. per cwt. on the same quantities, the product of the duty would have been 3,500,642*l*., and the drawbacks 172,894*l*. But the Department, while making this return as ordered by the House, states that these calculations are not estimates of the sums the sugar duties might have been expected actually to produce, or that would have been paid for drawbacks, because such alterations in the rates of duty and drawback would have materially affected both the home and export trades, and thereby produced very different results.

IMPORTS OF HOPS.—The imports of hops into the United Kingdom in August were 20,504 cwt., as compared with 1,160 cwt. in August, 1870, and 12,954 cwt. in August, 1869, and in the eight months ending August 31, 1871, 136,664 cwt., as compared with 69,673 cwt. in the corresponding period of 1870, and 149,046 cwt. in the corresponding period of 1869. The value of the hops imported to August 31 this year was 399,166*l*., as compared with 275 062*l*. in 1870, and 373,670*l*. in 1869 (corresponding periods).

CUSTOMERS FOR COTTON GOODS.—Among the British and Irish manufactures exported in the first nine months of 1871 have been 2,570 million yards of cotton piece goods, of the value of upwards of 40 million sterling. These goods have gone all over the world. To British India more than 665 million yards were shipped; to the Straits Settlements nearly 56 millions; to Ceylon nearly 21 millions; to China and Hongkong, 380 millions; to Egypt, above 211 millions; to Turkey, more than 153 millions. For America, 107 million yards to the United States, 37 millions to British North America, 64 millions to the United States of Columbia (New Granada), 130 millions to Brazil, 27 millions to the Argentine Confederation, 18 millions to Uruguay, 36 millions to Chili, 28 millions to Peru, 28 millions to Mexico, 55 millions to the foreign West Indies, and 29 millions to the British West Indies. The shipments to Japan have been 32 millions, to Australia 22 millions, and to Africa, nearly 31 million yards. In Europe, 59 millions to Germany, 56 millions to Italy, 55 millions to France, 43 millions to Portugal, 22 millions to Holland; to Java, 28 millions.

BREWERS AND BEER.—An Annual return shows that in the year ending 30th September, 1870, there were 32,623 licenses paid for by common brewers, the total license duty paid being 388,389*l*. One license was for brewing 550,000 to 600,000 barrels, one for 600,000 to 650,000, and one for 650,000 to 700,000 barrels, the duty paid in these three cases, with supplementary charge or deduction, being respectively 7,878*l*., 7,582*l*., and 9,155*l*. There were in the United Kingdom in the year above mentioned 98,652 licensed victuallers, 44,488 persons licensed to sell beer to be drunk on the premises, and 3,080 licensed to sell beer not to be drunk on the premises, making a total of 146,220; the last two classes being in England and Wales, and the victuallers, 69,903 in England and Wales, 12,644 in Scotland, 16,105 in Ireland. In the same year 536,946 barrels of beer, of the declared value of 1,930,083*l*. were exported from the United Kingdom, 216,534 barrels to India, 95,398 to Australia, 27,088 to the British West Indies, 17,606 to the foreign West Indies, 24,300 to the United States, 14,074 to Brazil, 12,432 to China, 11,944 to Gibraltar, 10,985 to South Africa.

WOOLLEN AND WORSTED FACTORIES.—The factory inspectors report 2,579 wool, shoddy, and worsted factories in the United Kingdom at the close of the year 1870, There were in them 4,148,318 spinning spindles running, and 337,805 standing; 426,940 doubling spindles running and 44,943 standing; 102,172 power looms running, and 13,317 standing. The number of power-loom weavers was 70,886. The amount of moving power was 103,466 steam, and 12,493 water. There were employed in these factories 12,114 females under 13 years old, and 118,246 above that age: 12,213 males under 13, 23,678 between 13 and 18, and 72,252 above 18. The totals are 108,143 males, and 130,360 females—making in all 238,503 persons. 125,130 were employed in wool factories, 109.557 in worsted, 3,816 in shoddy; 207,970 in England and Wales, 28,968 in Scotland, 1,565 in Ireland.

BEETROOT SPIRIT.—In the annual Report of the Commissioners of Inland Revenue allusion is made to an experiment

carried out on a large scale by a landed proprietor in making spirit from beet root. In 1869 he planted about 350 acres and set apart about 3,500 tons of the roots for distillation. Owing to a delay in completing the distillery, the operations which should have been commenced in the autumn were not commenced until January. The work was continued to the middle of April; but before that time the beet was so much injured by frost, spring-growth, and storing, that the portion used in March and April gave less extract and less alcoholic produce than were obtained in the earlier part of the year, the quantity of spirit obtained in April being 5 per cent. less than in January. The total produce of spirits was 39,569 proof gallons; the average quantity per ton of beet was about 11 proof gallons. The machinery and stills were erected by a French firm; the quality of the spirit, the Commissioners state, was superior to that usually obtained from beet-root; and the mode of manufacture was in conformity with the Excise laws and regulations. At the end of the season there were 20,556 gallons of this spirit remaining in warehouse, 17,000 gallons having been delivered for consumption and 1,157 gallons removed to Customs warehouse. During the year 1870–71 this distillery has been worked on a more extensive scale than previously, but further experience is necessary before the experiment can be said to establish the success of root distillation in this country.

RAILWAY IRON.—In the nine months ending September 30 1871, the aggregate exports of railway iron from the United Kingdom were 756,370 tons, as compared with 862,218 tons in the corresponding period of 1870, and 697,175 tons in the corresponding period of 1869. In these totals the United States figured for 389,535 tons, against 313,410 tons in the corresponding period in 1870, and 244,086 tons in the corresponding period of 1869; Russia for 69,398 tons, against 193,809 tons and 196,671 tons; and British America for 56,709 tons, against 29,912 tons and 23,669 tons. The exports have increased this year to Sweden, France, Egypt, Brazil, Peru, British America, and Australia; but they have decreased to Russia, Germany, Holland, Spain, Austria, the Spanish West Indies, Chili, and British India. The value of the railway iron exported in the nine months ending September 30 this year was 6,111,781*l.*, against 7,057,730*l.* in the corresponding period of 1870, and 5,578,447*l.* in the first nine months of 1869.

UNWROUGHT STEEL.—The exports of unwrought steel in the nine months ending September 30, 1871, were 26,801 tons, against 26,357 tons in the corresponding period of 1870, and 24,706 tons in the corresponding period of 1869. In these totals the exports to the United States were 14,245 tons against 12,125 tons in the corresponding period of 1870, and 12,224 tons in the corresponding period of 1869. The value in September, 1869, was 830,415*l.*, against 830,954*l.* in 1870, and 764,111*l.* in 1869 (corresponding periods).

---

4. POPULATION. PUBLIC EMPLOYMENT, AND VITAL STATISTICS.

FACTORIES AND WORKSHOPS.—A Blue-book has been issued, compiled by the Inspectors of Factories, showing, county by county, the number of factories and manufacturing establishments coming under the supervision of the Inspectors of Factories by the Factory Acts 1833 to 1867, and also (so far as could be ascertained) the workshops under the Workshops' Regulation Act of 1867. The information was chiefly collected in the last two months of the year 1870; and the former part of the return may be considered as nearly as possible accurate, the information having been supplied by nearly every manufacturer in the United Kingdom; but the statistics of workshops are in many places only partial. The returns show, county by county, the nature of the manufacture, the amount of machinery, the moving power, and the number and class of persons employed. The returns for England and Wales give an account of 97,074 works, employing 2,006,978 persons—viz., 1,364,713 males 642,265 females; 54,853 boys and 43,878 girls employed are under 13 years of age. Of the whole number of persons employed, 573,521 are in Lancashire and 414,709 in Yorkshire. The returns for Scotland show 30,139 works, employing 409,921 persons—viz., 264,507 males and 145,414 females; 3,566 boys and 3,418 girls are under 13. 144,498 of the whole number are employed in the county of Lanark. The returns for Ireland show 3,129 works, employing 123,890 persons—viz., 65,009 males and 58,881 females; 786 boys and 1,399 girls are under 13. 49,905 of the persons employed are in Antrim. There are separate returns of the occupations carried on in large towns, in manufacturing establishments in which the hours of work are regulated by any Act of Parliament. The number of persons employed in such establishments in the city of Glasgow is 114,864—viz., 76,054 males and 38,810 females; in the borough of Manchester, 45,433 males and 27,807 females; and in the borough of

Salford, 13,310 males and 9,997 females; in Leeds, 37,628 males and 14,904 females; in Sheffield, 40,306 males and 5,586 females; in Bradford, 24,212 males and 18,700 females; in Dundee, 15,700 males and 21,610 females; in Oldham, 20,055 males and 12,643 females; in Nottingham, 13,188 males and 12,351 females. A statement is given showing the average earnings of operatives in various occupations in different localities. Taking as an instance a fine spinning factory at Manchester, we learn that the average weekly earnings are as follows:—Hand-mule spinners—large mules, 50*s.*, small mules 45*s.*; piercers, women, 9*s.* to 10*s.*, young persons 6*s.* 6*d.*, half-timers, 2*s.* 6*d.*; card grinders, men, 21*s.*; card-strippers, 18*s.* 6*d.*; card-room frames, women, 9*s.* to 12*s.*; lap-carriers, girls, 6*s.* 6*d.*; hand reelers, girls, 11*s.*; mechanics, 33*s.* Hours of work, 59 per week. The returns fill 275 folio pages. It may be well to explain that the term "workshop" as used in the Workshop Act does not include every place of work, but only those in which children, young persons, or women are employed in manual labour in the way of trade or for gain in making any article or finishing or otherwise adapting it for sale.

MORTALITY IN LARGE TOWNS.—Including the metropolis, the twenty great cities of the kingdom, with an estimated population of 7,216,325 souls, stand on 333¼ square miles. In them, in the year 1870, 182,819 persons died, and 259,910 children were born. The birth rate was 36·0, the death rate 25·3 per 1,000 in the year. Fifty more cities of England, having populations ranging between 25,000 and 150,000, but averaging 52,000, experienced the lower death rate of 23·8 in 1,000. The mortality in the seventy cities of the kingdom was at the rate of 24·9 in 1,000. The mortality in the rest of the kingdom was at the rate of 22·1. For the year, the mortality was low in Portsmouth, Wolverhampton, Birmingham, Hull, and Sunderland; in these places it ranged from 20·1 in Sunderland to 21·8 in Hull and Wolverhampton. The mortality was highest in Leeds, 28·2; Glasgow, 29·8; Bristol, 29·9; and Liverpool, 31·1. The registered birth rate was 36·0 in the twenty great cities; it was at the rate of 40·1 in Salford, 40·2 in Leeds, and 31·4 both in Portsmouth and Nottingham. The ruling epidemic was scarlet fever. London and Liverpool were great sufferers. Diarrhœa was fatal, and so was fever. Then to violence many deaths were referred; in Birmingham 402, Liverpool 700, London 2,576. Liverpool is the first, Birmingham second, London third, in the rank of danger from violent death, of one kind or another. The seasons influence the mortality largely. The mortality was at the highest rate of 31 in 1,000 inhabitants of the great cities during the coldest week, when the temperature was 3·5 centigrade degrees below the freezing point; it was lowest (21) in the genial weeks of June. The mortality in Liverpool rose to 43, 44, and 49 in the last weeks of the year; in Sunderland and in Portsmouth the mortality was extraordinarily low. In the 17 large English cities 14 per cent. of the deaths occurred in public institutions, chiefly hospitals and workhouses. The proportions varied from 16 in London, 15 in Manchester, and 15 in Liverpool, to 4 in Wolverhampton, and 3 in Bradford.

BIRTHS, DEATHS, AND MARRIAGES IN GREAT BRITAIN, 1856–1870.

ENGLAND AND WALES.

Years.	Births.	Deaths.	Marriages.
1856	657,704	391,369	159,262
1857	663,071	419,815	159,097
1858	655,481	449,656	156,070
1859	689,881	441,790	167,723
1860	684,048	422,721	170,156
1861	696,406	435,114	163,706
1862	712,684	436,573	163,830
1863	727,417	473,837	173,510
1864	740,275	495,531	180,387
1865	748,069	490,909	185,474
1866	753,870	500,689	187,776
1867	768,349	471,073	179,154
1868	786,858	480,622	176,962
1869	773,381	494,828	176,970
1870	792,129	515,544	181,482

SCOTLAND.

1856	101,821	58,529	20,740
1857	103,415	61,906	21,369
1858	104,018	63,539	19,655
1859	106,543	61,714	21,201
1860	105,629	68,170	21,225
1861	107,036	62,287	20,828
1862	107,138	67,159	20,544
1863	109,325	71,421	22,087
1864	112,445	74,303	22,675
1865	113,126	70,821	23,577
1866	113,939	71,273	23,629
1867	114,115	69,024	22,521
1868	115,673	69,386	21,853
1869	113,395	75,789	22,083
1870	115,423	74,067	23,788

BIRTHS, DEATHS, AND MARRIAGES, IN IRELAND, 1864–1870.*

1864	136,414	93,144	27,406
1865	144,970	93,154	30,802
1866	146,237	93,598	30,151
1867	144,318	93,911	29,796
1868	146,108	86,803	27,753
1869	145,659	89,573	27,277
1870	150,151	90,695	28,835

* Owing to the defective state of the Registration, the figures for births, deaths, and marriages in Ireland are only an approximation to the real numbers.

A CENSUS OF FACTORY HANDS.—Some idea of the magnitude of the interests involved in the textile industry of the United Kingdom may be gathered from the fact that the number of persons actually employed in the mills, factories, and works, now falls little short of 1,000,000. Including printing, bleaching, and dye works, with other auxiliary processes, the exact number of persons in the 7,545 establishments of Great Britain and Ireland, according to a recent publication of Messrs. Redgrave and Baker, the Factory Inspectors, was, last year, 973,267, the larger half being females, namely, 563,077, the males amounting to 410,190. They were thus distributed through the various branches of employment:—

Factories in 1870.	No.	Number of Hands employed.		
		Males.	Females.	Total.
For spinning and weaving—				
Cotton	2,483	178,397	271,690	450,087*
Wool	1,829	63,143	61,987	125,130
Shoddy	120	1,906	1,910	3,816
Worsted	630	43,094	66,463	109,557
Flax	500	38,096	86,676	124,772
Hemp	35	1,442	1,708	3,150*
Jute	63	4,372	13,198	17,570
Silk	696	13,987	34,137	48,124
Hair	37	745	1,594	2,339
Lace	224	5,998	2,372	8,370
Hosiery	129	4,594	5,098	9,692
Elastic web	61	2,759	1,864	4,623
For embellishing the fabrics, &c.:—				
Calico printing	96	20,051	5,475	25,526
Other print works	53	4,144	638	4,782
Bleaching and dying	439	23,904	7,523	31,427
Calendering, &c.	150	3,558	744	4,302
Total	7,545	410,190	563,077	973,267

The return issued for 1868, gave only 401,064 persons as engaged in the cotton mills, thus showing that there has been an addition of 49,000 hands in the course of two short years. In wool there has been a slight diminution of briskness as compared with 1868; about 2,000 fewer hands being engaged. In worsted, however, the falling-off is greater; 22,000 hands less than in 1868. The silk mills have work for 7,000 more hands than they could use two years ago. The flax mills are employing 5,000 more persons than they did in 1868, and 37,000 more hands than in 1861. The total of the hands engaged in all kinds of spinning and weaving in 1868, was 858,000; the corresponding return for 1870 was 907,000.

LUNATIC ASYLUMS.—From a return moved for in the House of Commons by Lord Robert Montague, it appears that in the various borough and county lunatic asylums in England and Wales on the 1st day of July last there were 31,474 inmates, of whom 19,005 were members of the Church of England, 2,835 Roman Catholics, 7,099 belonging to other denominations, and 1,635 whose denomination was unknown.

MORTALITY IN LONDON.—The mean rate of mortality in the metropolis, as shown in the Registrar-General's Returns, for 31 years is 24·34, and the mortality in 1870 is a little below this; it is 24·12. The mortality is usually higher than the mean in the East and Central Districts, lower than the mean in the West and North Districts; but the mortality of both West and North Districts rose above their average in the year 1870. The effects of the drainage of the low south districts has reduced the annual rate of mortality in the three decenniads, since 1840, in the following progression of improvement, 26·6, 24·4, 23·2. The small-pox still ravages London; it destroyed 25,061 lives in the 31 years, 1840–70. The annual deaths averaged 808. The lowest number of deaths in any one year was 154 in 1857; the highest number was 2,012 in the year 1863. In 11 of the years the deaths exceeded 1,000, in 13 they were below 600; thus they fluctuated to the extent of one-fourth every two or three years. The deaths rose above 1,200 six times, and fell below 400 eight times. Taking this standard the disease is very fatal every five years on an average. The disease can be

* In the official return there is an error of 1,000 in the total under cotton, as well as in the total under silk. The figures above are corrected accordingly.

followed week by week, quarter by quarter, and taking the quarter of highest small-pox death return as the keystone of the arch, we have 10 epidemics in 30 years, one every three years. A new small-pox epidemic of unexampled severity began at the end of the year 1870. The seasons do not affect the mortality of the epidemic to any great extent; thus the weekly mean number of deaths was 16; the weekly deaths in the winter quarter were 17, in the summer quarter 14. The mortality is highest in winter, lowest in summer; it is at the average in spring and autumn.

MORTALITY FROM SMALL POX IN ENGLAND AND WALES.—The following return shows the actual or estimated population of England and Wales for each year from 1840 to 1842, both included; the number of deaths from small-pox in each year: and the percentage of deaths on the average population of the three years; of the same for the years 1847 to 1853, both included; of the same for the years 1854 to 1861, both included; of the same for the years 1862 to 1869, both included; and, of the same for the Metropolis, with the addition of the returns for the years 1843 to 1846, both included.

YEARS.	Estimated Population in the Middle of each Year.	Deaths from Small-pox.	Average Annual Death Rate per cent. from all Causes.	Average Annual Death Rate per cent. from all Causes.
1840	15,717,619	10,434		
1841	15,929,494	6,368		
1842 *	16,139,552	2,715		
Average of 3 years	15,928,888	6,506	.041	2·20
1847	17,169,314	4,227		
1848	17,372,746	6,903		
1849	17,575,950	4,645		
1850	17,779,216	4,666		
1851	17,982,848	6,997		
1852	18,187,178	7,320		
1853	18,392,550	3,151		
Average of 7 years	17,779,972	5,416	·030	2·29
1854	18,599,318	2,808		
1855	18,807,856	2,525		
1856	19,018,556	2,277		
1857	19,231,825	3,936		
1858	19,448,082	6,460		
1859	19.667,775	3,848		
1860	19,891,360	2,749		
1861	20,119,314	1,320		
Average of 8 years	19,348,011	3,240	·017	2.21
1862	20,352,140	1,628		
1863	20,590,356	5,964		
1864	20,834,496	7,684		
1865	21,085,139	6,411		
1866	21,342,864	3,029		
1867	21,608,286	2,513		
1868	21,882,059	2,052		
1869 †	22,164,847	1,565		
Average of 8 years	21,232,523	3,856	·018	2·26

* For the years 1843, 1844, 1845, and 1846, the deaths from small-pox in England and Wales were not separately abstracted.

† The revision of the figures for 1870 is not yet completed; the unrevised figures show a total mortality of 515,544, and 2,580 deaths from small-pox.

Mortality from Zymotic Diseases in the United Kingdom.—The following returns show the deaths from zymotic diseases (small-pox, measles, scarlet fever, diphtheria, hooping cough, fever, cholera, diarrhœa, &c.), during each of the five years from 1865 to 1869, as compared with the population and the total mortality.

England and Wales.

	1865.	1866.	1867.	1868.	1869.
Estimated Population in the middle of the Years.	20,990,946	21,210,020	21,429,508	21,649,377	21,869,607
Total Deaths from all Causes	490,909	500,689	471,075	480,622	494,828
Deaths from Zymotic Diseases	113,948	115,972	90,989	117,356	110,601

Ireland.

	1865.	1866.	1867.	1868.	1869.
Estimated Population . .	5,641,086	5,582,625	5,557,196	5,543,285	5,536,217
Gross Number of Deaths Registered from All Causes	93,154	93,027	93,503	86,185	89,573
Zymotic Diseases	19,802	19,626	16,066	16,487	15,388

Scotland.

	1865.	1866.	1867.	1868.	1869.
Estimated Population . . .	3,136,057	3,153,413	3,170,769	3,188,125	3,205,481
Total Number of Registered Death from all Causes .	70,891	71,348	69,068	69,416	75,789
Number of Registered Deaths from Zymotic Diseases	16,863	15,564	13,256	15,170	Not yet ascertained.

London in 1870.—According to the Registrar-General's Annual Summary for 1870, the area of London (registration division so called) is 77,997 acres, or 122 square miles; this is equal to 31,563 hectares, or 316 square kilometres. The houses—412,142, inhabited by an average 7·8 persons; Annual Value of Property (county rate assessment of 1866) = 15,261,999*l.*; and the density—102 persons to a hectare: 41 persons to an acre; 26,393 to a square mile. The population of London resides at a mean elevation of 11·9 metres (39 feet) above Trinity high-water mark; the elevation varying from 3·4 metres (11 feet) below high-water mark in Plumstead Marshes to 131 metres (429 feet) above high-water mark in Hampstead. In 1870 the population estimated to the middle of the year, was,—males, 1,499,339; females, 1,715,368; total 3,214,707. The births in the metropolis were,—males, 58,031; females, 55,468: total 113,499; giving an annual rate of births per 1,000 of 35·31. The deaths in 1870 were,—males, 39,730; females, 37,548: total 77,278; showing an annual rate of mortality per 1,000,—males, 26·59; females, 21·96; total rated, 24·12.

Irish Registrar-General's Return—The Registrar-General for Ireland reports that 150,151 births were registered in Ireland in 1870, being only 2·72 per cent. of the estimated population; and 90,695 deaths, being only 1·64 per cent. 28,835 marriages were registered, giving a ratio of 1 in every 191, or ·52 per cent. of the population—the number of Roman Catholic marriages (26 & 27 Vic., cap. 90) affording a ratio of only 1 marriage to every 208 of Roman Catholics;—and the number of Protestant marriages (7 & 8 Vic. cap. 81), a ratio of 1 in every 149 of Protestants,

LUNATICS IN ENGLAND AND WALES.—The summarized returns of lunatics on the 1st of January, 1870, showed that there were 46,548 lunatics, idiots, and other persons of unsound mind in England and Wales, an increase of 1,395 in a single year. The vagrant population in London has diminished. The maximum reached in the winter of 1869 was 7,020, the number had fallen in 1870 to 5,430.

5. CRIME, PAUPERISM, AND ACCIDENTS.

COLLIERY EXPLOSIONS.—The first report, just issued, of a committee formed about three years ago in South-West Lancashire for the purpose of administering relief to sufferers by colliery accidents gives some details as to the aggregate loss of life by reason of the nine great explosions which have occurred since November, 1868, and as to the number of orphans and widows who are or have been dependent on the fund for support. The committee was originally formed to meet the immediate necessities of the sufferers by the Hindley-green explosion in 1868, by which 62 lives were lost, and it was at first intended only to apply to that disaster. Other explosions, however, followed in rapid succession, and each was included in the operation of the fund until, at length, the names of 148 widows and 349 fatherless children have been placed upon the books of the committee. The following table, published in the report, gives the names of the collieries where the accidents happened, the date of each disaster, and the number of widows and children whose husbands and fathers lost their lives:—

Place.	Date.	Deaths.	Surviving sufferers.	
			Widows.	Children.
Hindley Green . . .	Nov. 26, 1868 .	62	22	55
Norley	Dec. 21, 1868 .	7	7	26
Haydock	Dec. 30, 1868 .	26	41	97
Haydock, 2nd explosion .	July 21, 1869 .	59		
Rainford	Jan. 8 & 10, 1869 .	9	6	15
Park Lane	April 1, 1869 .	31	13	27
Low Hall	Nov. 15, 1869 .	28	13	27
Brynn Hall	Aug. 19, 1870 .	20	9	18
Moss Pits	Sept. 6, 1870 .	70	37	84
Total	. . . . .	312	148	349

Eight of the above were fire-damp explosions, and one was caused by an outburst from a ventilation furnace and falls down a pit shaft. Five of the explosions were in what is known as the Wigan Nine-feet Mine. The report also gives a table showing how the number of cases for relief from each accident has been gradually reduced in proportion to the number of sufferers, and the length of time since the accident. At the close of last month the recipients of relief numbered,—widows, 80; children, 179; but the explosion on the 6th Sept., has brought up the number of widows to 117, and of children to 263. The total amount of subscriptions received and promised is 8,500*l.*, of which 5,800*l.* has been spent, leaving a balance of 2,700*l.* Funds in Bolton and Liverpool amounting to upwards of 2,000*l.* make a total of nearly 5,000*l.* believed to be available.

FIRES IN LONDON DURING 1870.—The Report of Captain Shaw, the Chief Officer of the Metropolitan Fire Brigade, shows that 1,946 fires were attended by the brigade during the year 1870, an increase of 374 or 24 per cent. on the previous year, compared with the average of the last 10 years the increase is 555. Of these 1,946 fires, 276 were returned as serious, while 1,670 resulted in but "slight losses;" the respective increase upon the previous year's classification was 39 and 22 per cent.

Thee stablishment consists of 378 firemen at 50 fire-engine, 92 fire escapes, and 3 floating stations, distributed over an area of about 100 square miles. In addition to two floating steam fire engines, there are 110 land engines, of which 25 are steam and 85 manual engines. The number of watches kept up throughout the metropolis is at present 104 by day and 176 by night.

The fire-escape service, which forms a branch of the duties of the fire brigade, consists of 104 fire escapes at 92 stations. Among the 378 firemen 104 accidents occurred during the year, against 102 in the previous year. The quantity of water used in extinguishing fires in the metropolis during 1870 is estimated at rather more than eleven million gallons, in the proportion of about one gallon to every 3,000 of the total amount supplied for all purposes. Captain Shaw while readily admitting that "the efforts of the Water Companies to meet our requirements are worthy of all praise," gives it as his opinion that the really important object is to obtain water with quickness and certainty, which can be effected only by means of a *constant high-pressure service*. He further expresses a belief "that London will not submit much longer to the inconveniences and risks of intermittent water supply," and anticipates that "when constant high pressure services have been established all over the metropolis, the quantity of water used in extinguishing fires will be still further reduced, for it must be remembered that in many cases a single gallon at an early stage is more effective than a million gallons half an hour later."

CONVICT PRISONS.—The Returns relative to convict prisons are for the financial year ending March 31, 1871. The daily average number in the ten convict prisons of England was 9,220—viz., 8,028 males and 1,192 females. There were received in the year 2,052 males and 356 females. There were discharged or parted with in the year, 1,717; 117 on termination of sentence; 1,399 on tickets-of-leave—viz., 1,152 males and 247 females; 3 on medical grounds; 13 on commutation of sentence, 27 were pardoned, 122 died, one committed suicide, 3 escaped, and 32 were removed to lunatic asylums. The establishments of the ten convict prisons comprise 1,639 persons. The gross annual charge per convict was 31*l*. 5*s*. 10*d*., being a decrease of 18*s*. 5*d*. as compared with the preceding year, following a decrease in each of the two years before that. Deducting the value of labour (exclusive of employment in the service of the prisons) viz., 184,866*l*. —and some small incidental receipts, the net cost of the convict prisons is 113,054*l*., and the net annual charge per convict, 11*l*. 16*s*. 7*d*.

REFORMATORY AND INDUSTRIAL SCHOOLS. —The commitments to reformatory schools in the year ending at Michaelmas, 1870, were 1,313. Rather more than half had been committed to prison more or less frequently before the conviction on which they were sent to the reformatory; as many as 48·4 per cent. were sent on their first commitment. The number under detention at the end of the year was 4,356—viz., 3,495 males and 861 females. The statistics of ignorance are striking:—51·3 per cent. of the males committed to reformatory schools in the year, and 46·1 per cent. of the females, could neither read nor write; 41·5 per cent. of the males and 44·2 per cent. of the females could only read or read and write imperfectly; 7·2 per cent. of the boys and 9·7 per cent. of the girls could read and write well. Since the passing of the Act 17 and 18 Victoria, cap. 86, there have been 16,679 commitments to reformatories—viz., 13,585 males and 3,094 females. The payment by the Treasury on account of reformatory schools reached 66,129*l*. in the year 1869-70. There were 1,450 commitments to industrial schools in the year 1869-70—viz., 1,163 boys and 287 girls; and there were under detention at the end of the year 4,878—viz., 3,744 boys and 1,134 girls. There were, besides, 109 boys committed to Feltham Industrial School in the year under the local Act, and 268 under detention there at the end of the year.

CRIMINAL LUNATICS.—There were 788 criminal lunatics, 41 more than in the preceding year, under detention in asylums and licensed houses in the year 1869-70—namely, 626 males and 162 females. 182 were committed in the year, and 630 remained under detention at the end of the year. When their term of punishment expires they are treated and classed as pauper lunatics; the above numbers are criminal lunatics. Of the whole 788 there were 488 in Broadmoor State Asylum. Of the 788 there were 160, or more than 20 per cent. who had been charged with murder—viz,, 105 males and 55 females; six females with infanticide, 112 males and 27 females with manslaughter and attempts to murder; 21 per cent. with petty thefts. 42 per cent. became insane after trial, 29 per cent. were acquitted as being insane, 24 per cent. were found insane, and 5 per cent. were insane persons committed by justices. Of those who became insane after trial only 3·6 per cent. were persons charged with murder, 7·2 per cent. with attempts to murder, and 35 per cent. with petty thefts. 198, or 25·6 per cent. of the criminal lunatics have been under detention above ten years; 75, or 9·5 per cent. for above 20 years. There were 34 deaths in the year, 4 escapes, 13 became sane, and 16 others were removed sane for trial or punishment, two were removed to other asylums, and 89 became pauper lunatics on expiration of their term of punishment. Thus the 788 criminal lunatics were reduced to 630 at the end of the year. Of the costs, amounting to 35,750*l*., 26,532*l*. or 74 per cent. came from the public purse; the remainder chiefly from the local rates. The average cost per head at Broadmoor was 65*l*. 9*s*. 7*d*.; in county asylums, 24*l*. 4*s*. 1*d*.

ACTUAL CRIME IN ENGLAND AND WALES, 1869-70.—Indictable offences naturally take the first place. The number of these crimes, so far as known to the police, was 51,972,

being 11 per cent. fewer than in the preceding year. The number of murders was 101; of attempts to murder, 52; of manslaughter, 219; of shooting at, wounding, stabbing, &c., 631; of burglaries, 2,878; of breaking into shops, warehouses, &c. (or attempts), 1,586; of robbery (or attempts) with violence, 630; larcenies, 36,103. All these numbers are below, most of them considerably below, those of the preceding year. Offences against the person were 2,707, a decrease of 8·4 per cent.; against property with violence, 5,197, a decrease of 14 per cent.; against property without violence, 41,055, a decrease of 10·9 per cent.; forgery and offences against the currency, 1,005, a decrease of 22·8 per cent.; malicious offences against property, 603, an increase of 18·4 per cent. Of the 101 murders, 10 were committed in the metropolis, 10 in Liverpool, 4 in Manchester, 8 in Staffordshire, 6 in Yorkshire, 5 in the county of Durham. 43 men and 24 woman were committed for trial for murder; 35 men and 6 women for attempts to murder; 347 men and 42 women for shooting at, stabbing, &c.; 97 men and 24 women for manslaughter. The cases of arson and other malicious burning were 449, an increase of 110. There were 31 cases in Yorkshire, 26 in Hampshire, 25 in Lincolnshire, 24 in Devon, 22 in Kent, 22 in Somerset, and 23 in Wales. 163 males and 16 females were committed for trial for this offence. The number of persons apprehended for the whole 51,972 indictable offences in the year 1869–70 was 26,613, or 51·2 per cent. on the number of the crimes committed. Nearly a third were discharged by the magistrates for want of evidence or want of prosecution: 68·5 per cent. were committed (or bailed) for trial, so that the number of persons sent for trial was in the proportion of rather more than 35 per cent. on the total number of indictable crimes committed. Of the persons apprehended, 20,275 were males and 6,338 females; 72 per cent. of the men apprehended were committed for trial, but not so many as 58 per cent. of the women—a disproportion which is not peculiar to this particular year. From the imperfection of the returns, the fate of the 18,222 persons committed for trial for indictable offences cannot be traced, but it is estimated that about 75 per cent., or 13,666, would be convicted. To this number must be added the summary convictions, 389,712, a large proportion of the offences being of a trifling character; and we have thus 403,378 persons convicted of offences in England in the year 1869–70, being 4 per cent. more than in the preceding year. It ought to be, but it is not, stated how many were males and how many were females. The information, however, is given in the case of summary proceedings. The whole number of persons proceeded against summarily in the year was 526,869, or 1·7 per cent more than in the preceding year; 427,546 were males and 99,323 females—that is to say, 81·2 per cent. males and 18·8 per cent. females. Ten years before, in the year 1859–60, the total was but 384,918; since 1861 it has always been above 400,000, and since 1868 above half a million. The number convicted in 1869–70 was 73·9 per cent. of the number proceeded against—a high ratio, and higher than in any previous year. 322,792 of the males, or 75·5 per cent., were convicted; and 66,920 of the females, or 67·3 per cent. The proportion of the convictions of females to the number of females proceeded against is increasing. The character of the offences is seen in the list of sentences. Only 3,302, less than one per cent., of the convictions, were sentenced to imprisonment for above three months; only 85 for above six months; only 95,552, or 24·5 per cent. to imprisonment at all. Nearly a quarter of a milion, not far from two-thirds of the number convicted, were only fined, 659 were ordered to be whipped. Many of the offences, however, are decidedly of a criminal character. The summary convictions show 21,951 males, and 6,708 females for stealing or attempting to steal; 45,625 males and 10,580 females for assaults; 9,084 males and 5 females for trespassing in the daytime in pursuit of game; 522 males for night poaching; 904 males and 10 females for offences against the Poaching Act of 1862; 70 males and 5 females for illegally selling or buying game. The number of persons proceeded against for drunkenness or being drunk and disorderly was 100,357 in the year (ending at Michaelmas) 1867, 111,465 in 1868, 122,310 in 1869. 131,870 in 1870. The number in this last year comprised 98,942 males, and 32,928 females; and 84,933 males and 24,423 females were convicted, the punishment, generally, being a fine. 365 persons, one a day, were convicted in the year 1869–70, of selling unsound food; 5,512 of offences against the Weights and Measures Act; 751 of offences against the Public Health Acts; 596 of breach of the Cattle Plague Orders, 80 of offences against the Chimney Sweepers Act, 3,915 of cruelty to animals, 450 of offences against the Factory Acts, 410 of offences against the Fishery Acts, 3,526 males and 188 females of deserting or neglecting to support their family, 10,640 persons of begging.

CORONERS' INQUESTS.—There are 336 coroners in England, and 25,376 inquests were held in 1870, 17,606 on males and 7,770 on females. There were 222 verdicts of murder, many of these standing under another denomination in the police returns in consequence of the case proving at the trial not to be so serious; 149 of these verdicts were on inquests held upon infants not more than a year old; half these inquests were held in Middlesex, but whether half the crimes of this character in England were committed in Middlesex may be doubted. Coroners' juries also found, in 1870, 1,517 verdicts of suicide by 1,135 males and 382 females; 316 verdicts of death from exces-

cessive drinking by 221 men and 95 women; 128 verdicts of death from disease aggravated by neglect; and 320 verdicts of death from want, cold, exposure, &c.; 7,319, or nearly 29 per cent. of all the inquests, were on children not more than seven years of age, and 20 per cent. of these children were illegitimate. There were 4,367 inquests on infants not above a year old, and 28 per cent. of these were illegitimate. The cost of inquests averaged 3*l.* 2*s.* 4*d.*

CRIME IN ENGLAND.—The commitments for trial in 1870 are stated at 17,578, or 9 per cent. less than in the preceding year. There were 14,010 males, a decrease of 10·8 per cent.; and 2,568 females, a decrease of 0·7 per cent. It is a proof of the need of a revision of these statistics that the classification and description of indictable crimes committed in the year ending at Michaelmas, 1870, differs from that for the year ending with December, 1870. The numbers for trial in the several Courts were 7,849 at county Quarter Sessions, 3,243 at borough Sessions, 3,196 at the Assizes, 1,092 at the Central Criminal Court, and 2,198 at the Middlesex County Sessions, 4,577, or 26·04 per cent., were acquitted or not prosecuted; 48, or 0·27 per cent., were found insane; 12,953, or 73·69 per cent., were convicted. There were 15 persons sentenced to death, 12 males and three females, all for murder; and five males and one female (Margaret Waters, baby-farmer), were executed. 1,788 persons—viz., 1,548 males and 240 females were sentenced to penal servitude; 206 persons were sent to reformatories, and 242 fined or discharged on sureties. 3,559 persons on conviction, previous convictions being proved against them, became subject to police supervision under the Habitual Criminals Act of 1869. The sums paid by the Treasury on account of criminal prosecutions are stated for 1869—134,453*l.* in respect of indictments, or 8*l.* per case; 18,989*l.* on summary proceeding, or 19*s.* 7*d.* per case. The cost of 243 Mint prosecutions concluded in 1870 was 2,341*l.*; and of 25 other criminal cases prosecuted by the Solicitor to the Treasury, and concluded in 1870, 3,579*l.*

PRISONS AND THEIR INMATES.—The returns presented, showing the inmates of prisons, are for the year ending Michaelmas, 1870. There are in England 121 county, borough, and liberty prisons, and there were committed to them in the year 168,134 persons—viz., 126,788 males and 41,346 females; but 8,441 males and 363 females were debtors, and 2,107 men were military and naval offenders. The total shows a decrease of 2·8 per cent. 125,730 were persons convicted summarily, and either sentenced to imprisonment or imprisoned in default of payment of a fine inflicted. The remainder comprises persons under remand, or committed for trial, or convicted at assizes or sessions. The number of recommitted prisoners again shows an increase, but of only 4 per cent. this year. 59,698 of the persons committed (being other than debtors, military offenders, and persons remanded and afterwards discharged), or 37·9 per cent., had been previously committed to some prison; 35 per cent. of the males, and 45·8 per cent. of the females. 2,180 of the males, and 3,289 of the females had been previously committed above ten times; and against such might be written "incorrigible." 787 of the males and 240 of the females had been previously sentenced to transportation or penal servitude; above half these prisoners were found in the counties of Lancaster, Middlesex, or York. Of the 157,223 criminal prisoners committed in the year, 1,511 males and 1,504 females were under 12 years of age, and 7,108 males and 1,198 females were aged 12 and under 16. There were 3,328 natives of Scotland among the prisoners, and 21,985 natives of Ireland. 53,265, a third of the whole number could neither read nor write; 98,482, above 62 per cent., could only read, or read and write imperfectly; rather more than 3 per cent. could read and write well. 74,458 were labourers, charwomen, needlewomen; 27,694 were mechanics and skilled workers; 8,597 prostitutes; 7,891 factory workers; 5,404 shopkeepers and dealers; 5,108 domestic servants; 4,838 sailors, marines, and soldiers; 2,185 shopmen, shopwomen, clerks, &c.; 335 in professional employment; 146 foremen and overlookers of labour; 20,209 had no occupation, and the occupations of 358 were not ascertained. The daily average of prisoners was 19,830, being 250 fewer than in the preceding year,—15,881 males and 3,949 females. There are in the county, borough, and liberty prisons of England 27,169 separate sleeping cells, and 22,300 cells are certified by an inspector as fit for separate confinement. 77,299 males and 22,684 females were under sentence of hard labour in the year, being 1,538 fewer than in the preceding year. There were 52 deaths in the prisons in the year, being 32 more than in the preceding year; the deaths were one in 748 of the total number under detention in the course of the year. The number of prison punishments, 65,010 shows a decrease of 957; 243 prisoners were punished with a whipping, 91 with irons or handcuffs, 17,984 with solitary or dark cells, and 40,870 with stoppage of diet, &c. The number of prison officers was 2,530, or one to 7·8 of the daily average number of prisoners. The number of male warders and other subordinate officers gives one to 10·6 of the daily average number of male prisoners; with the females the ratio is one to 12·1. The cost of the prisons was 667,486*l.*, showing an increase of 27,168*l.*, owing to extraordinary charges for building and establishment expenses. The average yearly charge per prisoner was 33*l.* 13*s.* 7*d.*; or, omitting the extraordinary charge for buildings and fittings, 24*l.* 14*s.* 10*d.* The highest average was at Oakham, where an establishment was maintained for a daily average of only six prisoners, and the average cost per prisoner was 130*l.* 15*s.* 9*d.*;

in Durham county prison, with an average of 493, the cost was only 16*l.* 12*s.* 11*d.* The receipts of the prisons from profits of prisoners' labour were 41,272*l.*; small contingent receipts, 6,197*l.*; from local rates and funds, 502,240*l.*; from the public purse, 117,777*l.*

THE POLICE.—The police force of England and Wales consisted, at Michaelmas, 1870, of 26,441 officers and men, being an increase of 544, or upwards of two per cent., over the number at the same period of the preceding year. The number of detective officers has increased from 425 to 432. The county constabulary are 9,272; the borough police, 7,352; the metropolitan police, 9,118; the City of London police, 699; and there is an increase in numbers in all but the last of these four classes. The cost of the police and the constabulary for the year, reached 2,182,522*l.*, being an increase of 65,637*l.* over the cost in the preceding year, and of 296,447*l.* over the year 1865–66. The increase has been chiefly in salaries and pay. The total cost last year, including establishment charges and superannuation allowances, is equal to 82*l.* 10*s.* 10*d.* per man (reckoning officers and men) of the effective force, or 16*s.* more than in the preceding year, and above 5*l.* over the average of the four years 1865–68, and nearly 10*l.* over the average of the years 1860–61. The increase in the cost of the force for the year 1869–70, as compared with the preceding year, is 11,178*l.* in the borough police, 5,624*l.* in the county constabulary, 45,174*l.* in the Metropolitan police, and 3,660*l.* in the City of London police; the charge for the year 1869–70 being 755,073*l.* for the county constabulary, 592,184*l.* for the borough police, 830,212*l.* for the Metropolitan police, and 68,052*l.* for the City of London police. The City stands alone, and maintains its own police. In the other parts of the kingdom, nearly a fifth of the charge—a fourth in the case of the metropolitan police—is contributed from the national revenue.

CRIMINALS AND SUSPICIOUS PERSONS.—The returns show 22,014 known thieves and depredators, 2,602 receivers of stolen goods, and 28,371 suspected persons, making in all 52,987 persons, or 2·3 per cent. fewer than in the previous year, which in its turn showed a larger decrease. The decrease of 1869–70 is almost entirely in the number of suspected persons; but the receivers of stolen goods were fewer by 34. Of the whole number, there were 7,187 under sixteen years of age, being a decrease of 408, and 45,800 were above sixteen, a decrease of 854. The return of the metropolis is more favourable than for England as a whole. It shows 1,807 known thieves, 142 receivers of stolen goods, and 2,158 suspected persons, making a total of 4,107, or not much more than a thirteenth of the total; but this may be partly owing to greater facilities for concealment. To these 52,987 bad subjects at large in England must be added 19,470 persons in county and borough prisons, other than debtors and naval and military prisoners; 9,553 in convict prisons; 4,356 in reformatories; making the total of the estimated criminal classes in England 86,366, being 661 less than in the preceding year, which itself showed a decrease of 641. But here are included persons summarily convicted and sent to prison, sometimes for offences not of a highly criminal character,—drunkenness, disobeying bastardy orders, non-payment of fines. The number of houses of bad character to which the criminal classes resort shows a decrease of nearly 13 per cent., compared with the number in the preceding year. The houses of receivers of stolen goods are 1,753, a decrease of 209; public-houses, beer-shops and coffee-shops, the resort of thieves and prostitutes, 2,824—a decrease of no less than 1,373, the beer-shops in the list decreasing from 1,930 to 943; the brothels are 6,000—a decrease of 287; and other houses of known or suspected bad character are 2,504—a decrease of 80. The total is still 13,081. By far the largest proportion, as compared with population, is in the provincial boroughs. The number in the metropolis is stated at 1,522, but the metropolis has a seventh of the population of England. The large decrease of 22 per cent. and 51 per cent in the number of public-houses and beer-shops the resort of thieves and prostitutes is probably due to the operation of the Wine and Beer-shop Act of 1869 and the Habitual Criminals Act, which have given the authorities a more effective control over houses of this description and the classes who frequent them.

PAUPERISM IN ENGLAND AND WALES.—In the Annual Report of the Poor Law Board (now the Local Government Board) for 1870–71, the returns for the in-maintenance and out-relief are brought up to Michaelmas 1870, and the numbers of all classes of paupers to January 1, 1871. 7,644,307*l.* was expended in poor relief during the parochial year 1869–70, against 7,673,100*l.* in the previous year, showing a decrease of 28,793*l.* During the four preceding years the amount spent had increased from 6,439,515*l.*, in 1865–66, to 7,673,100*l.*, in 1868–69. The decrease in 1869–70 amounted to one penny farthing per head. With a population in 1834 of 14,372,000, the expenditure was 6,317,225*l.*; rate per head, spent in relief, 8*s.* 9½*d.* In 1870, with a population of 21,980,000, the expenditure was 7,644,307*l.*; rate per head, 6*s.* 11¼*d.*—a favourable change, accounted for in no small degree, as the net value of rateable property in 1841 was 62,540,030*l.*, while in 1868 it was 100,668,698*l.* The population had been augmented by a third, the value of property had increased in a still higher proportion. The total

number of out-door paupers in London, on July 1, 1870, was 105,238. 6,523 were insane. Men, 12,686; women, 41,435; children under sixteen, 44,466. Causes of destitution:—Widows, 9,248; their children, unable to work, 23,354; un-married mothers, 385; dependent children, 758; wives of prisoners, 306; children, 905; wives of soldiers and sailors, 90; children, 225; wives deserted, 1,080; children, 2,864; orphan children, 958. Destitution caused by sickness or want of work of husbands and single men: — Sickness, selves or families, 1,523; want of work, 1,469; wives and children, 15,836: single women, 739. Out-door paupers, exclusive of the insane and vagrants—Men, 130,993; women, 322,820; children under sixteen, 254,489. Total, 708,302. Percentage on total 100·0. Of these 104,789 men, and 235,377, with 39,919, were destitute, owing to old age or permanent disability, while from temporary sickness or want of work, 98,568 had become destitute. The report invites special attention to these facts, as showing the small number of really able-bodied men relieved from the poor-rate as compared with the whole number of out-door paupers. On July 1st, 1870, there were 843,663 out-door paupers; the able-bodied relieved on account of want of work was only 2,715, and adding to these their wives and children, 7,694, the total of able-bodied persons receiving relief was only 10,409, being 1·2 per cent. of the whole number of out-door poor. The next year brought an increase. On January 1, 1871, the total number of out-door paupers was 912,890; the able-bodied relieved because out of employ was 9,654: wives and children dependent upon them, 28,910. A total of 38,564 persons, or 4·2 per cent. The season was very unfavourable, and various other temporary causes increased the destitution. An average price of wheat per quarter from 1849 to 1871, throws a strong light on the causes of pauperism during that period. 1849, per quarter, 49*s.* 9*d.*; 1855, 70*s.*; 1856, 75*s.* 4*d.*; 1860, 44*s.* 9*d.*; 1861, 55*s.* 10*d.*; 1865, 39*s.* 8*d.*; 1870, 46*s.* 2*d.*; 1871, 49*s.* 8½*d.* In the worst years of the series, 1856, 1857, the population was 19,043,000, and 19,207,165, the price of wheat per quarter being 75*s.* 4*d.* and 65*s.* 3*d.* The steady increase of cost for poor relief in the metropolis is thus shown: in 1861 it was, in-door 275,422*l.*, out-relief 208,674*l.* In 1866, in-door 339,087*l.*, out-relief 238,569*l.* In 1870, in-door 420,006*l.*, out-relief 412,817*l.* The total expenditure in the latter year on all accounts, lunatics, salaries, &c., was 1,465,874. The charge for in-maintenance for the year ending Lady-day, 1870, was 1,502,807*l.*, against 1,052,807*l.*, in 1869; a saving of 43,773*l.*: and as the number of in-door paupers was 156,800 the yearly cost was 9*l.* 11*s.* 8*d.* per head, or 3*s.* 8*d.* per week. For out-relief the charge last year was 3,638,051*l.*, against the former year's charge of 3,677,379*l.*, showing a reduction of 44,328*l.* The chage per head was 4*l.* 5*s.* 6*d.*, the same amount as in the former year. The maintenance of lunatics in asylums cost, in 1870, 722,613*l.*, an increase of 11,672*l.* over the same item in 1869. Much of this extra cast was due owing to the transfer of patients to the asylums. The payments in respect of the principal and interest of workhouse loans in 1870 was 252,215*l.*, against the sum of 204,601*l.* in 1869, showing an increase of 47,614*l.*, and of this amount 43,405*l.*, was owing to cost of new buildings in the metropolis. The charge for salaries and rations of officers, and superannuations, 818,183*l.*, is an increase of 13,047*l*, over the same item in 1869. The cost of the machinery to administer relief has increased; the amount of money spent in actual relief has diminished during the year.

The workhouses in and around London have been considerably improved during the past year. Especially care has been taken to give better infirmary accommodation than formerly. More room has been insured by removing the imbecile inmates to the asylums at Caterham and Leavesden; the numbers, on the 12th of May, were, at Leavesden, 1,594; at Caterham, 1,364.

6. EDUCATION.

ANNUAL PARLIAMENTARY GRANTS FOR EDUCATION IN ENGLAND FROM 1833 TO 1871.

1833—1838	£20,000	1854 . .	263,000	1860 . .	798,167	1866 . .	694,530
1839—1841	30,000	1855 . .	396,921	1861 . .	803,794	1867 . .	705,865
1842—1844	40,000	1856 . .	451,213	1862 . .	842,119	1868 . .	781,324
1846—1850	115,000	1857 . .	541,233	1863 . .	804,002	1869 . .	840,711
1851 . .	150,000	1858 . .	663,435	1864 . .	705,404	1870 . .	914,721
1852 . .	160,000	1859 . .	836,920	1865 . .	693,078	1871 . .	1,458,402
1853 . .	260,000						

ELEMENTARY EDUCATION IN GREAT BRITAIN.—The Report of the Committee of the Privy Council on Education, for the year 1870, brings us up to the 31st of August, 1870, up to which date the chief statistical and other returns of the Committee are as usual made up. As the Elementary Education Act, which was under the consideration of Parliament when the last report was issued, did not receive Her Majesty's assent till the 9th of August, 1870, none of the great changes made by that Act in the national provision for elementary education in England took effect within the year

now under review. The report is accordingly confined to the general summary of the principal results attained in the schools under inspection in 1870.

Elementary Schools.—In the year ending 31st August, 1870 the inspectors visited 10,214 day schools in Great Britain, to which annual grants were made, containing 14,158 departments under separate teachers. These schools, at 8 square feet of superficial area per child, would accommodate 2,152,712 scholars. There were on the registers the names of 1,949,026 children, of whom—

493,507 were under 6 years of age;
1,257,969 were between 6 and 12;
197,550 were above 12.

Of these scholars 1,654,210 were present on the day of the inspector's visit to their respective schools, while 1,355,911 were in average daily attendance throughout the year; 1,375,612* having made the requisite number of attendances (200 times, or 100 days) were qualified to bring grants to their schools, 285,001 (being under six) without individual examination, and 1,090,611 (above six years of age) on passing a satisfactory examination before the inspector in reading, writing, and arithmetic; 887,041 were actually presented for such examination, and 627,227 passed the prescribed test without failure in any one of the three subjects. The inspectors also visited 735 schools which do not fulfil the conditions on which annual grants are made. In these schools 46,094 scholars were present on the day of inspection.

Night Schools.—The night schools examined during the year were 2,580 in number; 76,937 scholars above 12 years of age were, on an average, in attendance each night; 93,591 scholars were qualified for examination by having made 24 attendances during the night schools session of (at least) 40 nights. Of these 75,985 were actually examined, and out of every 100 scholars so examined, 92 passed in reading, 85 in writing, and 82 in arithmetic.

Teachers.—The inspectors found 14,966 certificated teachers at work in the aided schools which they visited, while the 45 training schools, from which the supply of such teachers is mainly recruited, furnishing accommodation for 3,261 students, contained, in 1870, 1,478 students in the first, and 1,122 in the second year of their residence. These students (with very few exceptions) and 645 acting teachers, were examined for certificates in December, 1870, and in the following week 2,044 candidates for admission to the 1,547 vacancies declared in the training colleges were examined, of whom 1,761 were successful, while 1,597 are at this moment in their first year of residence, along with 1,316 students of the second year.

* Of these 60,585 were half-timers, from whom 100 attendances were accepted as sufficient.

The Work of Inspection.—All this work of inspection and examination was carried out, under the supervision of the central office, by 79 inspectors, with the aid of 24 assistants. Of these officers, 49 inspectors were employed in visiting 6,382 schools connected with the Church of England; 14 inspected 1,549 Protestant schools in England not so connected; four inspected 415 Roman Catholic schools in Great Britain; eight visited 1,251 schools connected with the Church of Scotland; three were employed in inspecting 527 Free Church and other schools not connected with the Established Church; and one inspector, whose whole time however was not devoted to the public service, visited the 90 schools of the Episcopal Church of Scotland.

School Accommodation.—The schools in England and Wales under inspection, and actually visited in the last four years, furnished accommodation in 1867 for 7·46 per cent., in 1868 for 7·91 per cent., in 1869 for 8·34 per cent., and in 1870 for 8·75 per cent. of the whole estimated population. The average attendance in these schools as compared with the same population, in like manner rose from 4·53 per cent. in 1867, to 4·85 per cent. in 1868, to 5·24 per cent. in 1869, and to 5·62 per cent. in 1870. This is satisfactory in so far as it shows that the accommodation supplied by our schools, and the attendance of the scholars frequenting them, have increased in a greater ratio than the population of the country, while the supply of teachers qualified, or preparing, to undertake the charge of these schools has also steadily improved. But the accommodation in our schools continues to be largely in excess of the number of children who avail themselves of it, while the attendance at inspected schools falls grievously short of the supply of scholars who ought to be forthcoming from the population. If, moreover, we apply to the children who do attend our schools any test of their attainments at all proportioned to their respective ages, we shall find that the results are much below any standard that can be accepted as satisfactory. This may be briefly shown as follows:—In 1870 the inspectors visited, in England and Wales. 12,061 day schools, or departments of day schools, receiving annual aid, and under the charge of separate teachers. Of these schools or departments 2,486 are for boys only, 1,805 for girls only, in 5,766 boys and girls are instructed together, and 2,004 are mainly attended by infants. These schools would hold 1,878,584 scholars, and 1,152,389 (653,882 males and 498,507 females) were in daily average attendance throughout the year. In their instruction were employed 6,395 schoolmasters and 6,072 schoolmistresses, either already certificated or passing the probationary period of two years, between the date at which they successfully passed their examination and the issue of their certificates.

EXPENDITURE FROM EDUCATION GRANTS.—The following Table shows the Expenditure from the Education Grants voted by Parliament for the year ended 31st March, 1870, the increase or decrease under the several heads of expenditure compared with the preceding year, and the total expenditure from 1839 to 1870:—

	For Year ended 31 March, 1870	Compared with Year ended 31 March, 1869.		From 1839 to 31 March, 1870.
		Increase.	Decrease.	
1. In Annual Grants paid for 1869–70, in Scotland only, according to the Code of 1860, viz:	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Grants in Augmentation of the Salaries of Certificated Schoolmasters and Schoolmistresses	41,266 13 1	4,694 15 7	. .	1,127,723 17 3
Grants to pay the Stipends of Pupil-teachers, and Gratuities to the Schoolmasters and Schoolmistresses instructing them	48,984 11 8	10,149 13 4	. .	2,818,834 9 2
Stipends to Assistant Teachers	234 3 4	. . .	343 15 0	69,637 15 0
Stipends to Teachers in Night Schools	717 13 7	205 18 3	. .	13,101 8 5
Special Allowances for Drawing	. . .	. . .	. .	9,899 8 0
Grants to Industrial Classes in connection with Elementary Day Schools	64 6 5	11 17 7	. .	101,540 11 10
2. Unexpired Pensions	492 1 8	. . .	47 18 4	9,536 16 8
3. Annual Grants to Elementary Day Schools in England and Wales under Revised Code, viz.:				
For Day Scholars	532,091 4 8	47,208 14 10	. .	2,775,174 10 1
For Evening Scholars	22,298 19 6	2,895 4 6	. .	89,864 1 5
4. Towards building, enlarging, and furnishing of School premises	32,658 5 5	. . .	3,320 9 6	1,727,499 9 11
5. In Annual Grants to Training Colleges	73,442 12 7	2,634 15 5	. .	1,336,372 5 9
6. Administration:—	£ s. d.			
For Inspection	61,483 16 10			
For Office in London	22,325 10 9			
Contingencies of Office, viz:— £ s. d.				
Extra Copying 2,524 4 2				
Sundry Office disbursements 112 14 9				
	2,636 18 11	2,407 19 3	. .	1,245,821 13 6
Stamps on Pupil-teachers' Agreements	511 12 6			
Poundage on Post Office Orders	491 3 3			
Parliamentary Returns	636 5 9			
7. Discontinued:—				
Capitation Grants under the Old Code in England and Wales	. . .	. . .	. .	473,946 19 2
In Books, Maps, Diagrams, and Scientific Apparatus	. . .	. . .	. .	52,520 11 2
Payments from the Vote for Public Education by Treasury in 1843, 1850, 1853, and 1844	. . .	. . .	. .	11,604 9 0
Total	£840,335 19 11	70,208 18 9	3,712 2 10	11,863,078 6 4

PROGRESS OF EDUCATION IN GREAT BRITAIN.—The following table, compiled from the last official returns, exhibits the progress of education in Great Britain, distinguishing England and Wales, and Scotland, in the sixteen years from 1855 to 1870:

Years ended 31st August.	ENGLAND and WALES.		Years ended 31st August.	SCOTLAND.	
	Number of primary Schools inspected.	Number of Children present at inspection.		Number of primary Schools inspected.	Number of Children present at inspection.
1855	3,853	483,934	1855	974	85,142
1856	4,237	552,226	1856	942	93,679
1857	4,438	602,557	1857	960	98,315
1858	5,435	698,303	1858	1,206	123,441
1859	5,531	757,082	1859	1,055	123,049
1860	6,012	830,971	1860	1,260	131,961
1861	6,259	879,884	1861	1,446	148,806
1862	6,413	906,158	1862	1,456	151,268
1863	6,227	932,603	1863	1,512	160,138
1864	6,470	983,928	1864	1,421	149,303
1865	6,805	1,081,480	1865	1,573	164,575
1866	7,134	1,116,374	1866	1,619	171,230
1867	7,601	1,210,301	1867	1,739	180,799
1868	8,051	1,332,533	1868	1,843	195,132
1869	8,592	1,448,299	1869	1,745	191,203
1870	8,281	1,434,766	1870	1,933	219,444

TOTAL FOR GREAT BRITAIN.

Years ended 31st August.	Number of primary Schools inspected.	Number of Children present at inspection.	Years ended 31st August.	Number of primary Schools inspected.	Number of Children present at inspection.
1855	4,800	569,076	1863	7,739	1,092,741
1856	5,179	645,905	1864	7,891	1,133,291
1857	3,398	700,872	1865	8,438	1,246,055
1858	6,641	821,744	1866	8,753	1,287,604
1859	6,586	880,131	1867	9,340	1,391,100
1860	7,272	962,932	1868	9,894	1,527,665
1861	7,705	1,028,690	1869	10,337	1,639,502
1862	7,569	1,057,426	1870	10,214	1,654,210

7. SOCIAL ECONOMY.

POST-OFFICE SAVINGS BANKS.—A Parliamentary return, moved for by Mr. Baines, gives an account of the business transacted in the year 1870 at every Post-office Savings Bank in the United Kingdom. The return shows that there are several post-office banks in England, with deposits exceeding 50,000*l.*; and the bank at the head post-office at Birmingham has deposits exceeding half a million sterling, although there are several other post-office banks in that town. The deposits in the post-office banks in Middlesex, including the City of London, amounted at the close of 1870 to no less than 2,728,634*l.*; in Surrey to 1,084,860*l.*; in Kent, 1,011,893*l.*; in Warwickshire, 925,791*l.*: in Lancashire only 899,345*l.*; and in all Yorkshire only 613,566. The post-office banks appear to be, to a considerable extent, used for other purposes than that of permanent investment of savings, for about a third of the entire deposits held was withdrawn in the year, and at many post-offices one-half. Some country districts, or centres of country districts, show a great contrast to this; the deposits in the post-office bank at Blandford exceed 50,000*l.*, and in that of Canterbury they exceed 138,000*l.*; and in both instances the year's withdrawals did

not amount to a fifth of the total deposits held. In the whole United Kingdom 6,333,082*l.* was added to the deposits in 1870, and 4,758,187*l.* was withdrawn. The net increase of deposits in the year (the excess of deposits over withdrawals) was 1,399,728*l.* in England, 46,007*l.* in Wales, 37,488*l.* in Scotland, 88,716*l.* in Ireland, 2,911*l.* in the Channel Islands—making a total increase of 1,574,895 in the amount of deposits. At the close of the year 1870 there were 1,072,953 depositors' accounts open in the English post-office banks, and sums amounting to 13,727,450 were due to the depositors; in Wales, 30,646 depositors, and 403,398*l.* due to them; in Scotland, 39,033 depositors, and 304,235*l.* due to them; in Ireland, 38,279 depositors, and 633,000*l* due to them; in the Channel Islands, 2,242 depositors, and 31,051*l.* due to them—making a total of 1,183,153 depositors, and 15,099,104*l.* due to them.

CO-OPERATIVE AND INDUSTRIAL SOCIETIES.—The Registrar reports that 67 new societies were registered in the year 1870. The number on the register at the end of 1869 (deducting societies dissolved) was 902, and 749 of these have made returns of their business in the year 1870, showing the following facts:—At the close of that year the 749 societies had 249,113 members, a share capital of 2,034,261*l.*, and a loan capital of 197,128*l.* The average stock-in-trade in the year was of the value of 912,127*l.*, and the cash received in the year for goods sold amounted to 8,202,466*l.* The trades carried on are chiefly in drapery, grocery, and other provisions. The total expenses for the year were 335,327*l.*; 92,333*l.* was paid for interest on share, loan, and other capital, and 42,817*l.* was allowed for depreciation. The disposable net profit realized from all sources in the year reached 555,435*l.*; 467,164*l.* was applied in paying dividends to members, 16,523*l.* in dividend allowed to non-members, and 3,775*l.* was allowed for educational purposes. The entire assets at the end of the year are stated at 2,649,426*l.*; the entire liabilities, 2,403,902*l.* Lancashire and Yorkshire are the chief seats of these societies. There are in those two counties nine associations, each of which received in the year above 100,000*l.* for goods. The North of England Co-operative Wholesale Association at Manchester (wholesale grocers, &c.), with 209 members, and a share capital of 19,015*l.* in 5*s.* shares, and a loan capital of 22,322*l.*, received 677,736*l.* in the year for goods, and paid 5,529*l.* in dividends to members; the interest paid on share, loan, and other capital is stated at 2,073*l.*, and the total expenses at 5,585*l.*

8. EMIGRATION.

FIFTY-SIX YEARS' EMIGRATION.—From a return of the total emigration from the United Kingdom for such of the years from 1815 to 1870 inclusive, it appears that during that period the annual number of emigrants has risen from 2,081 to 256,940. The destinations of the travellers are classified under the North American Colonies, the United States, the Australian Colonies, and New Zealand, with a general heading for all other places. The Australian Colonies and New Zealand only make their appearance on the list in 1825 when 485 persons left England for Australasia; the number who went there in 1870 was 17,065, being 2,000 in excess of the previous year. We append a Table showing the total number of emigrants at every fifth year from 1815 to 1871.

Years.	Total.	Years.	Total.	Years.	Total.
1815	2,081	1835	44,478	1855	176,807
1820	25,729	1840	90,743	1860	128,469
1825	14,891	1845	93,501	1865	209,801
1830	56,907	1850	280,849	1870	256,940

The total for 1870 showed a decrease of about 1,000 on that of 1869, but in 1869, as compared with 1868, there was an increase of 62,000.

EMIGRATION TO THE UNITED STATES.—Of the 196,075 emigrants who went to the United States in 1870, 140,895 embarked at English ports, 16,682 at Scotch, and 38,318 at Irish, viz., from Liverpool, 137,321, of whom 16,587 were married men, 19,888 married women, 49 318 single men, 17,458 single women, 12,557 boys between the ages of 1 and 12, 10,760 girls between the same ages, 3,668 male and 3,212 female infants, 2,404 males and 1,469 females not distinguished as to age; 65,807 were English, 4,494 Scotch, 29,453 Irish, 33,694 foreigners and 3,873 not distinguished. From London, 3,574 embarked, of whom 487 were married men, 561 married women, 1,288 single men, 366 single women, 345 boys between the ages of 1 and 12, 373 girls between the same ages, 69 male and 77 female infants, and 8 males not distinguished as to age; 3,109 were English, 30 Scotch, 234 Irish, 193 foreigners, and 8 not distinguished. From Glasgow, 16,862 embarked, of whom

1,057 were married men, 1,055 married women, 6,607 single men, 3,675 single women, 1,831 boys between the ages of 1 and 12, 1,647 girls between the same ages, 594 male and 396 female infants; 11 were English, 12,114 Scotch, 406 Irish, 4,330 foreigners, and 1 not distinguished. From Cork, 30,227 embarked, of whom 1,458 were married men, 2,312 married women, 12,610 single men, 9,727 single women, 1,550 boys between the ages of 1 and 12, 1,507 girls between the same ages, 348 male and 273 female infants, 326 males and 116 females, not distinguished as to age; 8 were English, 2 Scotch, 29,759 Irish, 18 foreigners, and 440 not distinguished. From Londonderry, 8,091 embarked, of whom 346 were married men, 367 married women, 3,289 single men, 2,918 single women, 452 boys between the ages of 1 and 12, 475 girls between the same ages, 118 male and 121 female infants, and 4 male and 1 female not distinguished as to age; 8,039 were Irish, 46 foreigners, and 6 not distinguished. Of the 196,075 emigrants, 19,935 were married men, 24,183 married women, 73,112 single men, 34,144 single women, 16,735 boys between the ages of 1 and 12, 14,672 girls between the same, 4,797 male and 4,079 female infants, 2,742 males, and 1,586 females not distinguished as to age; 68,935 were English, 16,640 Scotch, 67,891 Irish, 38,281 foreigners, and 4,328 not distinguished.

EMIGRATION AIDED FROM THE POOR-RATES.—The removal of some of the restrictions which formerly existed in regard to emigration under orders issued by the Poor Law Board of England has resulted in a considerable increase in the number of poor persons sent out wholly or partially at the cost of the poor-rates. The number in the year 1870 was 536, and the expenditure authorized by the Board 2,568*l*. Among the number were 66 families, consisting of 348 persons, parents and children; there were also 39 single men and women, or boys and girls (other than orphans or deserted) not accompanying parents; and there were 149 orphans or deserted children accompanying a relative or in charge of Miss Rye, Miss Macpherson, &c., going with them to Canada. This last number comprised 14 boys and 107 girls under 14 years of age, and 7 males and 21 females above 14. Of the whole 536 emigrants, 38 went to the United States, 457 to Canada, 29 to Queensland, 2 to New Zealand, 1 to Melbourne, 6 to the Cape of Good Hope, 2 to Barbadoes, and 1 to St. Helena. Emigration to the United States was only sanctioned in exceptional circumstances; in nearly every instance the whole of the passage money was paid by the head of the family or other relative residing there, the expenditure by the guardians being limited to the cost of outfit or conveyance to the port of embarkation. So far as the occupations of the adult emigrants are stated, the men included 33 persons described generally as labourers; 4 were tailors, 4 sawyers, 3 bricklayers, 3 shoemakers, 2 boilermakers, and there was a commission agent, a labourer in ironworks, a butcher, a rivetter, a blacksmith, a gardener, a carpenter, and a painter. The women included 21 domestic servants, 6 charwomen, three needlewomen, and a velvet weaver. The Poor Law Board express their appreciation of the charitable efforts of Miss Rye and Miss Macpherson.

EMIGRATION IN 1869.—The number of emigrants who left the United Kingdom in 1870 was 256,940; the number in 1869 having been 258,027, there was a decrease last year of 1,087. The decrease was exclusively in the number of foreigners, the numbers in every other class having been greater than in the preceding year. The nationality of the emigrants of 1870 as compared with that of the previous seven years, was as follows:—

Year.	English.	Scotch.	Irish.	Foreigners.	Not distinguished.	Total.
1864	56,618	15,035	115,428	16,942	4,877	208,900
1865	61,345	12,870	100,676	28,619	6,291	209,801
1866	58,856	12,307	98,890	26,691	8,138	204,882
1867	55,494	12,866	88,622	31,193	7,778	195,953
1868	58,268	14,954	64,965	51,956	6,182	196,325
1869	90,416	22,559	73,325	65,752	5,975	258,027
1870	105,293	22,935	74,283	48,396	6,033	256,940

The decrease in the number of foreigners was, it will be seen, 17,356. As a large proportion of the foreigners who emigrate through this country are Germans or from German ports, it would be natural to attribute this decrease to the war. It is, however, remarkable that the decrease took place not in the six months during which the war was in progress, but in the six months which preceded it.

The destination of the emigrants in 1870, was as follows:—to the United States, 196,075; to British North America, 35,295, to Australia and New Zealand, 17,065; and to all other places 8,505. Of these the number of English exceeded that of 1854 by 15 per cent., and that of 1869 by more than 16 per cent., forming by far the largest English emigration on record. This was greatly owing to the exertions of

the societies and associations who during 1870 assisted bands of artisans and others to leave England.

The Irish emigration of 1870 exceeded the emigration of 1699 by 958 souls. The proportion, however, which it bears to the whole emigration continues to decrease. Thus, in 1868 the Irish emigration formed 47 per cent. of the whole British emigration; in 1869, 39½ per cent., but in 1870 only 36⅝ per cent. Nevertheless the proportion which the number of emigrants bears to the estimated population of Ireland far exceeds the proportion of the number of emigrants from England and Scotland to their respective populations.

The percentage of emigration to population from—

Ireland is 1·33 per cent.
England ,, ·48 ,,
Scotland ,, ·71 ,,

Of the emigrants who went to North America, numbering in all 231,370 souls, no less than 221 591 or 95·77 per cent. went in steamers, and only 9,779 or 4·22 per cent. in sailing vessels. The proportions in 1869 were 95·27 and 4·73 per cent. respectively. The resort to steamers in preference to sailing vessels has steadily advanced for the last eight years, and considering the great advantages that steamers offer as compared with sailing ships in the shortness and certainty of the voyage and the better accommodation, it is, the Commissioners consider, matter of congratulation that this should be the case. The deaths among 163 789 emigrants in 344 steamers from Liverpool, and 28,306 emigrants in 98 steamers from the Clyde, in all 192,095 souls, of which accounts have been received amounted to only 106 or ·05 per cent., which, assuming the average voyage at 12 days, would be equal to a mortality of 17 per 1,000 per annum. The mortality in the sailing ships, as far as it has been ascertained, was even smaller, regard being had to the greater length of their voyages, but the numbers carried in proportion to space were so different that they afford no fair criterion of the relative healthiness of steamers and sailing ships. In 1870 as in former years the amount sent home by previous emigrants to their friends in the United Kingdom was very large, including 727,408*l.* from North America and 12,804 from Australia and New Zealand. From 1848 to 1870 the amount sent home by emigrants from North America, through bankers, has reached the large sum of 16,334,000*l.*

The emigration to Australia and New Zealand amounted to 17,065 being 4,256 more than the emigrants of 1868 and 2,164 more than the emigrants of 1869. Of the whole number 4,395 were sent to Victoria by the agent-general for that colony, of whom 4,037 were nominated in the colony and 358 selected by the agent; 2,155 were sent to the several provinces of New Zealand, of whom 237 were nominated in the colony and 1,918 selected in this country; and 3,311 were sent to Queensland, of whom 2,413 went from this country and 898 from Hamburg. Of the Queensland emigrants from this country 610, and of those from Hamburg 15, paid their own passages. So far as returns have been yet received the emigration to Victoria appears to have been healthy, the deaths among 3,512 emigrants having been only 24, equal to a rate of ·67 per cent., or, taking the voyage at three months, 27·3 per 1,000 per annum. To Queensland the mortality was comparatively large, the deaths among 2,164 emigrants having been 23, equal to 1·06 per cent. Of the 23 deaths 10 were of infants.

The emigration conducted by the Emigration Board during 1870 was very small, it consisted of 126 emigrants, of whom 106 were female domestic servants sent to New South Wales, and of 16 emigrants, of whom 10 were female servants sent to West Australia. In July of last year the Commissioners received from the Government of New South Wales a request that they would undertake the expenditure of an unexpended balance of an old vote for immigration, amounting to about 11,000*l.*, in sending out to the colony female domestic servants. The arrangement proposed by the colonial authorities was that one ship should be dispatched in every second month carrying about 200 females with a few selected families for their protection. The impossibility of collecting so many as 200 eligible female emigrants in a short time, and the difficulty of retaining those who might be collected unless passages could be found for them without unreasonable delay, rendered the proposed arrangement impracticable. The Commissioners were therefore compelled to send out the young women as they collected them in small bodies in private ships, surrounding them with all possible protection and taking every other precaution for their well being. At the date of their report the board had already dispatched three parties comprising 197 females on this plan, of which two sailed in 1870; we have received the report of only the first of these ships carrying 44 emigrants, of whom 35 were single females. The report was entirely satisfactory; there were no deaths, and scarcely any sickness on the voyage, and the emigrants on their arrival obtained immediate and satisfactory engagements.

9. THE POST OFFICE.

CHANGES IN 1870.—The report of the Postmaster-General on the work of 1870, is of special interest, the year having been remarkable for several events which must have put the powers and capacity of the department to a severe test. There was the transfer

of the telegraphs to the Post-office; there were important postal changes, which came into operation in October; and there was interruption in our foreign communication by the war between Germany and France. The changes which came into operation in October were three. One was the introduction of the halfpenny card post; and so convenient has this been found that about 1,668,000 of these cards circulate through the post-offices in the United Kingdom in a week—1,374,000 in England, 167,002 in Scotland, and 127,000 in Ireland. At the same time the postage on newspapers was reduced to one halfpenny, without restriction as to weight or superficial area; and this will prove one of the most acceptable of modern improvements, The newspapers circulating through the post in the United Kingdom in the last quarter of the year 1870 are estimated to have been about 22,500,000, as against 20,000,000 in the corresponding quarter of 1869. Lastly, there was the reduction of postage upon book-packets, patterns, and samples, from one penny for four ounces to one half-penny for two ounces—a fair and useful change in the arrangement of the charge. In the last quarter of the year 1870, the book-packets, circulars, and pattern and sample packets passing through the post are estimated to have amounted to about 21,630,000. The Post-office, however, considered it necessary to insist strictly on the limitation to *bonâ-fide* patterns and samples. The public had not been strict in the observance of that limit, and much discontent arose. On this account, and from the difficulty of defining samples, it was determined to reduce letter postage to such an extent that not only samples, but all light articles, may be sent through the post in closed covers for a moderate charge, thus abolishing the distinction between letters and samples, and providing a cheap post for small parcels. This change to a charge of 1*d.* for one ounce, 1½*d.* for two ounces, and an additional halfpenny for every additional two ounces up to 12 ounces, which will be carried for 4*d.*, and will form the final limit (no letter or parcel to exceed 12 ounces), is yet a pleasure to come, but we believe it will not have to be long deferred. The book-packet rate will remain as at present.

POSTAGE DURING THE LATE WAR.—With regard to the interruption in our foreign communications caused by the war, the report says, very early in the campaign it became necessary to make fresh arrangements for forwarding mails which had previously gone through France. The North German Lloyd vessels ceased running to New York. The risk of interruption to our Indian mails became serious. It was found necessary to abandon the Marseilles route altogether, and to send through Belgium and Germany by the Brenner Pass to Brindisi, and thence by Italian packet to Alexandria, and this route has not since been departed from. On the whole, this change has been decidedly advantageous to the public—the postage is lower and the route is more expeditious. But it was in respect of the mails for France itself that the greatest perplexity prevailed. Amiens, the very keystone of communication, was threatened, and eventually closed. The mails were diverted from Calais to Cherbourg, Dieppe, and finally St. Malo. In the communication with Paris the pigeon post has become matter of history. Letters intended for this novel mode of transmission had to be sent to the head-quarters of the French Post-office at Tours, where, it is understood, they were all copied in consecutive order, and, by a process of photography, transferred in a wonderfully reduced form to a diminutive piece of very thin paper, such as a pigeon could carry, the photographic process being repeated on their arrival in Paris for the purpose of obtaining a larger impression. The letters were required to be posted open, without cover or envelope, registered, and restricted to 20 words; they had to be written in French, in a clear and intelligible manner, and relate solely to private affairs and contain no allusion either to the war or to politics. The charge was fixed at 5*d.* each word (the name and address counting as one word), and 6*d.* for registration. Between the early part of November, 1870, and the end of January, 1871, 1,234 letters were sent from London to Tours for despatch by pigeon post to Paris, then invested. With regard to other foreign postage arrangements, the report chronicles a reduction in the rate of postage between this country and Germany, and upon British mails passing through Germany; further steps towards the abandonment of the inconveniently small quarter-ounce scale, a reduction of the postage between this country and Norway, and several new contracts for the conveyance of mails by sea. The establishment of a colonial service between San Francisco and New South Wales and New Zealand makes the latter colony the last point on the route viâ Suez, the first point in the new one, receiving its mails from England 10 or 11 days sooner than before. It may be also mentioned here that the total estimated number of international letters sent to and received from the United States in 1865 was 2,241,440; in 1868 the postage was reduced from 1*s.* to 6*d.*; and in 1869 the number was 5,265,000 on the 1st January, 1870, the rate was reduced to 3d., and in that year the number of letters was 6,675,000, an increase of 171 per cent. over 1863.

LETTERS, MONEY ORDERS, AND REVENUE.—The home service shows in 1870 an increase in the number of head post-offices in the United Kingdom from 839 to 844. Seventeen towns were provided with additional mails to London. One town has now

nine mails every day from London, and eight with additional mails to London. The system of midnight despatches from London has been extended to additional towns, admitting of letters posted too late for the ordinary night mails being included in the first instead of the second delivery in the morning. The provinces have been very generally provided with a late day mail despatch to London, so that letters passing through the metropolis may there be disposed of overnight instead of in the morning. Greater use is made of the night railway trains. The number of contracts for the use of all trains has been increased; and in all three kingdoms the conveyance and delivery of letters has been accelerated. In England, there was, at the end of the year 1870, 357 towns with both a night and day mail from, and 258 with a night and day mail to London: 76 towns with three mails daily from, and 94 with three to London; 63 towns with four mails daily from, and 82 with four to London; 27 towns with five mails daily from, and 43 with five to London; 2 towns with six mails daily from, and 7 with six to London: 3 towns with seven mails daily from, and 2 with seven to London; and one town with eight, and one with nine mails daily from London. The number of letters delivered in the United Kingdom increased from 831,914,000 in 1869, to 862,722,000 in 1870—viz., 714,278,000 in England, 83,265,000 in Scotland, 65,179,000 in Ireland, being 31 to each person in England, 25 in Scotland, 12 in Ireland. The increase was 3·8 per cent in England, 2·8 per cent. in Scotland, 3·4 per cent. in Ireland. The number of book packets, newspapers, and pattern packets delivered advanced from 108,668,000 in 1869 to 130,169,000 in 1870—viz., 101,710,000 in England, 13,766,000 in Scotland, 14,693,000 in Ireland; in England the increase was 21·9 per cent., in Scotland 17·7 per cent., in Ireland 8·3 per cent. The number of money orders issued increased from 9,811,432, for 19,395,635*l.* in 1869, to 10,231,525, for 19,993,987*l.* in 1870, viz., 8,717,972, for 17,062,015*l.* in England; 838,942, for 1,607,964*l.*, in Scotland; 674,611, for 1,324,008*l.*, in Ireland; the average amount of an order being a fraction over 39*s.*, and the average commission 4·19*d.* The increase in money orders issued in 1870 over 1869 was 2·9 per cent. in England, 4·8 in Scotland, and 3·2 in Ireland. In 1870, 24,674 money orders were also issued in the United Kingdom for payment of 97,760*l.* abroad; and 125,575 orders were issued abroad for payment of 548,624*l.* in the United Kingdom. The number of letters returned in the year declined to 3,792,894; no less than 11,505 bore no address at all, and 289 of these were found to contain money to the amount of 3,376*l.* Nearly all the returned letters were restored to the writers, but 212,224 were either destroyed or remained in hand when the return was made up. There were also returned, in 1870, 864,210 book packets, 21,683 pattern and sample packets, and 613,007 newspapers. Of the whole 936,000,000 letters and book packets passing through the post in 1870 unregistered, 27,913 were alleged to be lost; the number seems large, but it was ascertained that many of these letters had either never been posted or had been delivered. The number of inland registered letters and packets passing through the post in 1870 was 3,005,094, and only 12 were lost, or not quite one in a quarter of a million. The gross revenue of the Post-office in 1870 was 4,929,475*l.* of which 184,093*l.* was for commission on money orders; the cost of the service was 3,435,865*l.* (1,737,768*l.* for conveyance of mails, at home and abroad, and 1,698,097*l.* for collection, delivery, and management; the net revenue was 1,495,610*l.* In the five years 1861-65 the net revenue averaged 1,001,763*l.* a-year; in the years 1866-70, 1,407,046*l.* At the end of 1870, the staff of officers, omitting those exclusively employed on telegraph duties, was 28,429, of whom 70 were stationed abroad. The number was above 1,000 more than at the end of 1869. The increase was caused by the October changes, and the growth of the Post-office business generally. The number includes 14,318 sorters, letter-carriers, messengers, &c., and 13,893 postmasters and clerks. There was an addition of 750 to the London establishment, and a great part consisting of boys employed mostly in the sorting of newspapers.

Licenses and Savings Banks.—The Post Office is now used for other purposes besides the conveyance of letters. It issues dog licenses and what are now known as "establishment licenses." In 1870, the Post-office issued 524,077 dog licenses, at 5*s.* each; and some persons would be very thankful if there were no more than this number of dogs in England. In the same year the Post-office issued 72,053 licenses, at 15*s.* each, for male servants; 30,716 licenses, at 42*s.*, for carriages, and 72,817 at 15*s.*; ten licenses to horse-dealers, at 12*l.* 10*s.*; 199,330 licenses at 10*s.* 6*d.*, for horses and mules; 5,774, at two guineas, for armorial bearings, and 9,991 at one guinea; and 40,742 gun licenses. The Post office savings banks had, at the close of the year 1870, 1,183,153 depositors, with 15,099,104*l.* due to them. In the Post-office savings banks and old savings banks there were at the end of 1870, 2,567,909 depositors—2,235,238 in England, 234,228 in Scotland, and 98,443 in Ireland. There were also 2,480 Government policies of insurance, insuring sums amounting to 190,072*l.*; 1,532 immediate annuities, amounting to 30,632*l.*, purchased by the public for 349,553*l.*; and 238 deferred annuities, amounting to 4,677*l.*

10. MISCELLANEOUS.

PETITIONS TO THE HOUSE OF COMMONS.—A return of the number of public petitions presented and printed, with the total number of signatures, shows for the session of 1870 17,500 petitions presented, 1,046 of them printed, number of signatures 2,853,221. The annual average for the four years 1868–71 was 18,332 petitions presented, 955 printed, signatures 2,797,816. The annual average for 1863–67 was very much less: petitions presented 10,661, printed 796, signatures 1,371,578. Since 1862 126,636 petitions have been presented to the House of Commons; 7,802 printed; and the total number of signatures in the nine years 1863–71 has been 18,049,161.

A YEAR'S BLUE-BOOKS.—The "Sessional Printed Papers" of 1870 are, we believe, now complete. Those of the House of Commons are described as filling 72 volumes, but, in fact, they fill 76, as the report and papers on primary education in Ireland are reckoned as only one volume, though it is divided into five thick "parts." Four volumes are occupied by the public Bills of the session; seven volumes by the reports of select committees of the House; 29 volumes (in fact, 33), by the reports of Commissioners and of the heads of public departments; 32 volumes by accounts and papers. In this year, 1870, an annual report by the Commissioner of Police of the Metropolis was first laid before the House of Commons and published among the Parliamentary Papers. The Sessional Papers of that House include also in 1870 a general index to the Bills, reports, accounts, and papers laid before the House of Commons and printed, from 1852 to 1869 inclusive. The Sessional Papers of the House of Lords for 1870 fill only 70 volumes. That House has fewer select committees; and many accounts and papers relating to finance laid before the House of Commons are not presented to the House of Lords, and, indeed, many papers not relating to finance. The reports on corrupt practices at elections occupy unusual space in the papers of 1870. The ordinary reports from Secretaries of Embassy and Legation seem fewer than usual, but they had to make some special reports on land tenures, and on the condition of the industrial classes in foreign countries. One way or another, the devourer of Blue-books may now count on his 70 volumes a year as a regular issue, and generally on something more.

THE PRIVATE BUSINESS OF THE SESSION OF 1871.—Excluding Estate and Provisional Order, &c., Acts, the practical result of the Private Bill legislation of the session was the passing of some 82 railway, 7 tramway, 28 gas, 26 water, and 47 miscellaneous Acts, of which 17 had reference to Ireland, 26 to Scotland, and the remainder to England and Wales. On the whole, the private business of the session was not particularly heavy, very many of the Bills having been unopposed, and committed in the usual *pro formâ* manner before the Chairman of Committees in the Lords, and the Chairman of Ways and Means in the Commons. The opposed Bills, however, were sufficient to occupy the attention of 18 Committees in the Lords and 32 in the Commons. The preambles of 27 Bills were not proved to the satisfaction of the Committees. Five out of the nine thrown out in the Lords had previously received the sanction of the Commons and two out of the sixteen rejected by the Commons had been sent from the Lords. One Bill was negatived in the Commons on the motion for the second reading, and another, which had been reported by the Examiner of Standing Order Proofs, for non-compliance, failed to obtain the favourable—"merciful" the agents call it—dispensation of the Standing Orders Committee of the same House. Of these unsuccessful appeals for legislative powers 10 were railway, 4 gas, 2 water, and 13 miscellaneous Bills. Two private Bills were withdrawn, and afterwards reintroduced and passed as Public Acts—the Presbyterian Church of Ireland Act, and the Primitive Wesleyan Methodist Society of Ireland Act. Independently of the failure of its important sewage utilization schemes, and the suspension of its principal Tramway Bills, the metropolis will yet be a considerable gainer by the Private Bill labours of the session. Several valuable measures were got through including the Acts for securing the preservation to the use and enjoyment of the people, of Hampstead Heath, Wandsworth, Putney, and Wimbledon Commons, besides two Acts enabling the Corporation of the City of London to extend its market accommodation. In the matter of locomotion the metropolitan public will also have its wants still further provided for in several directions, but more especially by means of the Holborn Viaduct Station and the London Central Railway Acts, both of which will have to be carried out in a very short space of time. The latter, it will be remembered, sanctions the construction of an underground railway from Euston and St. Pancras to Charing Cross, together with two new streets between Oxford Street, at the bottom of Tottenham-Court Road, and Leicester Square and St. Martin's Lane. It is estimated that to complete this undertaking will require at least, if not more, than two millions of pounds sterling. The general list of Private Bills issued just before the opening of the session contained the names of 275 Bills, but, of course, numbers of them never got beyond that stage, while others were afterwards dropped for the session or withdrawn altogether.

LEGAL STATISTICS.—The return of the proceedings in Her Majesty's Court for Divorce and Matrimonial Causes shows that in 1870 382 petitions were filed, being seven more than in 1869. Besides these there were six petitions for protection of property and 80 for alimony, as against 17 and 85 in 1869. There were 835 motions, 828 summonses, and 284 causes tried. Judgment was given in 274 cases. During the 13 years the jurisdiction of the Court has been in existence, the total number of the petitions filed has been 4,155. There were four applications during the year 1870 for a new trial, four appeals to the full court, 41 petitions to vary settlements, 220 decrees nisi and 154 absolute, 22 decrees for judicial separation, five for restitution of conjugal rights and nine for nullity of marriage. In the Court of Probate the number of probates granted was 10,177, and of administrations 5,031; in 1869 there were 9,870 probates and 4,804 administrations. The total amount of stamps issued in London for probates and administrations was 934,078*l*., as against 937,000*l*. in the previous year. In the district registers, of which there are 40, there were in 1870 16,839 probates and 7,075 administrations granted, and in 1869 there were 16, 279 probates and 7,087 administrations. The amount of fees received in the district registers was 71,559*l*. in 1870, and 69,492*l*. in 1869. The amount of stamp duty was 712,933*l*. in 1870, and 625,215*l*. in the preceding year. The business of the Court of Probate continues to increase according to the increase of the property of the country. In the Ecclesiastical Courts there were 13 suits in 1870 as against 38 in 1869, 21 in 1867, and 1866. Further, there were 169 suits for faculties, of which 165 were decided and one refused; three were still pending.

JUDICIAL CIVIL STATISTICS.—The annual returns from courts and tribunals of civil jurisdiction in England show generally, in 1870, a decrease of litigation in the Common Law Courts as compared with the preceding year. In the superior Courts of Common Law 72,660 writs of summons were issued for commencing actions, being 11 per cent. fewer than in 1869. The appearances entered were only 23,577, so that in more than two-thirds of the cases no step was taken towards a defence. The proportion brought to trial was also less than in the preceding year. We collect that 2,508 entries were in the cause lists for the sittings at Westminster and Guildhall, 2,212 being new causes and the others remanets from the previous year; 1,304 were withdrawn, struck out, made remanets, or stayed. Of the remaining 1,204 there were 972 defended and 232 (not far from a fifth) undefended. In 47, after their being called on, and, it may be, partly tried, there was a verdict by consent, subject to a reference; in 36 a juror was withdrawn; in 21 the jury were discharged without finding a verdict in one, there was a *stet processus*. The remaining 1,099 were tried out; in 863 there was a verdict for the plaintiff, but in 33 it was subject to a special case for future argument: in 188 there was a verdict for the defendent, and in 48 a nonsuit. The circuit returns are not quite clear; but the fullest table represents that there were 1,428 causes for trial on the circuits, and that in 343 the record was withdrawn, or they were made remanets or struck out, or the venue was changed. Of the remaining 1,085 there were 88 referred at the trial; in 42 a juror was withdrawn; in 17 the jury were discharged without giving a verdict, and in four there was a *stet processus*. 934 causes were tried out—in 721 there was a verdict for the plaintiff, but in 21 subject to a special case; in 158 there was a verdict for the defendant; and in 55 a nonsuit. A return shows that verdicts were given at Westminster and Guildhall for sums amounting to 180,994*l*., and on circuit 188,402*l*.—making in the whole 369,396*l*., being 86,000*l*. less than in the preceding year; but in many cases an important question is decided, though the verdict may be for very small damages. In 222 cases rules *nisi* for a new taial or altering the verdict were granted by the courts sitting *in banco*, but only 96 of the rules were made absolute after argument. In 1870 17,725 writs of execution were issued from the superior courts of law—17,070 being writs against goods, five against the person, 520 writs of possession, and 130 writs of *elegit*. The business which comes before these courts when sitting *in banco* is of varied nature, and an enumeration would be tedious; at Chambers the judges made 35,689 common and 16,944 special orders; these numbers are smaller than in the preceding year. The Master of the Court of Common Pleas reports that four election petitions were tried in 1870: and costs amounting to 15,499*l*. were taxed, and reduced to 9,211*l*. The account of the Suitors' Fund of the three courts shows 142,501*l*. paid in, and 185,943*l*. paid out, reducing the balance at the end of the year to 69,449*l*.

In the County Courts of England and Wales 912,795 plaints were entered in 1870, being 3 per cent. fewer than in the preceding year—523,340 causes were determined, a smaller proportion of the plaints entered than in either of the three preceding years. Only 921 causes were tried by a jury. The plaintiffs had judgment in their favour in 505,744 cases, and for 1,321,223*l*. The average claim for each plaint entered in 1870 was higher than in former years, and amouted to 2*l*. 17*s*, 11*d*. The Court fees amounted to 352,845*l*. The number of debtors imprisoned under warrants of commitment was 6,597. 179,882 executions against goods were issued, but only 3,765 sales were made. Orders were registered for the protection of 841 wives deserted by their husbands.

CHRONICLE OF EVENTS AND OCCURRENCES,

HOME AND FOREIGN.

From November, 1870, *to November*, 1871.

1870.

Nov. 3. Prince Arthur made his first speech in public at the unveiling of the Memorial Window to the Prince Consort at the Guildhall.

–. Dr. Power, Master of Pembroke, elected Vice-Chancellor of Cambridge University, in room of Dr. Atkinson, retired.

7. Prince Christian installed as High Steward of Windsor, an office vacant since the Prince Consort's death.

10. Army of the Loire, under General Aurelles de Paladine, captured Orleans, this being the first defeat of the Germans since the commencement of the war.

—. Capitulation of Neu Breisach, 5,000 prisoners and 100 guns captured.

12. Russia announced that she no longer considers herself bound by the Treaties of 1856.

15. Investment of Montmedy completed by the Prussians.

—. War outlay by the Prussians to this date estimated at £18,150,000 sterling.

—. Treaty concluded between Plenipotentiaries of North German Confederation, and of Baden and Hesse-Darmstadt, for entry of those States in the Northern Bund.

16. Duke of Aosta, youngest son of the King of Italy, elected to the throne of Spain, *vice* Queen Isabella, by 191 votes: 311 Deputies present, 60 voting for a Federal Republic, 27 for the Duke de Montpensier, 2 for the Duchess, 8 for Espartero, and 3 for a Unitarian Republic; 19 did not vote.

18. Lt.-Col Hogg elected Chairman of the Metropolitan Board of Works, in the room of the late Sir James Thwaites.

19. Reports from Cape of Good Hope that 11,000 persons are at work in the diamond fields of the colony, and that a diamond weighing 88 carats has been found.

21. Isabella, the ex-Queen of Spain, issued a protest to the Spanish people against the election of King Amadeo.

22. Archbishop of Canterbury, with Her Majesty's consent, left England for a lengthened residence on the Continent, for the benefit of his health.

—. Decree published at Paris, prohibiting exportation of salt, butter, and eggs, from France.

25. Occupation of Thionville, and capture of 4,000 prisoners, with 200 guns, by the Prussians.

25. Sanction of Her Majesty to the marriage of the Princess Louise and the Marquis of Lorne, published in the *London Gazette*.

—. Privy Council judgment in Martin *v.* Mackonochie issued, condemning the defendant to be deprived for 3 months for disobedience to previous monition.

26. Seven persons killed by an accident to the Liverpool Express train at Harrow.

27. Defeat of the French at Amiens by the German First Army under Manteuffel.

29. Election of Members of the London School Board.

30. Consecration of Rev. H. Cheetham as Bishop of Sierra Leone, Rev. H. C. Huxtable, Bishop of Mauritius, and Rev. A. B. Webb, Bishop of Bloemfontein.

Nov. 30. Consecration of the new Cathedal of St. Fin Barre at Cork.
Dec. 4. Evacuation of Orleans by French troops. Occupation of Rouen by Germans under Manteuffel.
6. King of Bavaria invites the King of Prussia to assume the title of Emperor of Germany.
-. Collision on North Eastern Railway, 6 persons killed.
9. Occupation of Dieppe by German army under Manteuffel.
-. Explosion at Ludlow's Ammunition Factory at Whitton, near Birmingham, 35 persons killed.
10. Amendment of the Constitution, and bestowal of the title of Emperor of Germany upon King William, voted by 188 ayes against 6 noes in the North German Parliament.
12. Capitulation of Phalsburg.
—. Railway accident near Barnsley, 20 persons killed.
14. Lord Lawrence elected Chairman, and Mr. C. Reed, M.P., Vice-Chairman of the London School Board.
15. H.M.S. *Psyche* lost on a rock near Catania, all hands and the instruments of the Eclipse Expedition, saved.
16. First stone of new Post-Office buildings, in St. Martin's-le-Grand, laid by Mr. A. S. Ayrton, M.P.
—. Intention of Government to release the Fenian prisoners announced.
20. Mr. Bright resigned his seat in the Cabinet.
21. Prussian list of losses in the war to this date amounts to 2,935 officers and 67,012 men.
25. Boring of the Mont Cenis tunnel completed after twelve years' labour.
28. The Tiber overflowed its banks, the inundation being more disastrous than any that has happened for 238 years.
29. Prussians occupied Mont Avron, and commenced to bombard the eastern forts of Paris.

1871.

Jan. 1. Marshal Prim buried at Madrid, and the young King entered the capital.
-. The Act for the dis-establishment of the Irish Church came into operation.
5. Prussians commenced to bombard the southern forts of Paris.
10. Explosion at Renshaw Park Colliery, 27 men killed.
11. Mr. J. H. Tillett, Liberal Member for Norwich, unseated by decision of Mr. Justice Keating, owing to bribery at his election in July, 1870.
12. Le Mans captured by the Prussians after six days' fighting, with upwards of 18,000 prisoners.
16. Rev. F. W. Farrar, M.A., F.R.S., elected Master of Marlborough College.
17. Conference on the Black Sea Question (Treaty of 1856) commenced sitting in London.
18. King of Prussia proclaimed Emperor of Germany at Versailles.
—. The new gun for the British Navy—the 35-ton Woolwich rifled muzzle-loader—finally tried and approved.
19. Sortie from Paris under General Trochu repulsed with great French losses.
20. Inundation of a colliery near Hartlepool; six men and one boy drowned.
23. Jules Favre proceeded to Versailles with proposals for capitulation of Paris.
—. Prince Humbert and Prince Margherita of Italy entered Rome.
25. Terms for capitulation of Paris, and an armistice of 21 days from the 28th instant agreed upon by Favre and Bismarck.
27. Mr. John Hopkinson announced as Senior Wrangler at Cam-

bridge, being the third Nonconformist who has headed the Tripos list since the Protectorate.

28. The Italian Senate at Florence by 94 votes to 39 agreed to the transfer of the capital to Rome.

29. The Rev. Thomas Binney preached his farewell sermon at the King's Weigh House Chapel, after 40 years' ministry.

31. Mr. Sant, R.A., gazetted as Painter in Ordinary to the Queen, in room of the late Sir George Hayter.

Feb. 7. Explosion in cartridge manufactory at Dunkerque, 60 persons killed.

8. Elections to the French National Assembly at Paris.

-. Emperor Napoleon issued a proclamation to the French nation.

9. Third session of 20th Parliament of Queen Victoria opened by Her Majesty in person.

10. Severe gale on the North East Coast.

13. The newly elected French Assembly sat for the first time.

—. Dowry of the Princess Louise voted unanimously in both Houses of Parliament.

16. M. Thiers elected "head of the Executive Power" in France, to exercise authority "under the control of the Assembly."

23. Judgment in case of Hebbert *v.* Purchas delivered, and defendant condemned.

25. The *Sun* first issued in 1792, published for the last time.

—. Treaty of Commerce signed between America and Italy.

26. Preliminaries for peace between France and Prussia signed at Versailles.

28. Treaty of Peace ratified by the French Assembly by 546 votes against 107: an indemnity to be paid by the French to the Prussians, consisting of 200 millions (English), 40 in 1871, 80 in 1872, and 80 in 1873.

March 1. Prussian Army entered Paris.

2. Bank Rate of Discount raised to 3 per cent.

3. Belgian Army placed on a peace footing.

-. Mr. Childers, M.P. for Pontefract, retired from office as First Lord of the Admiralty.

6. Debate on Second Reading of the Army Regulation Bill commenced in the House of Commons.

10. Transfer of the French Assembly to Versailles determined on by vote.

— Galignani reappeared in Paris, its publication having been suspended since 17th September.

13. Conference on the Black Sea question closed its sittings.

—. New Lectionary Bill read a second time in the House of Lords.

16. Bill for abolition of University Tests read a second time in House of Lords.

17. Shock of Earthquake felt in Cumberland, Yorkshire, and Lancashire.

18. Revolution by the Red Republicans of Paris commenced, and the city seized by insurgents.

19. The Queen of Spain arrived in Madrid.

20. The National Assembly met at Versailles for the first time.

—. The ex-Emperor Napoleon arrived at Dover.

21. Marriage of the Princess Louise with the Marquis of Lorne celebrated at St. George's, Windsor.

23. Three musicians, Messrs. Bennett, Benedict, and Elvey, knighted.

27. Bill for legalizing Marriage with deceased Wife's Sister rejected in the House of Lords by 97 to 71.

28. The Commune proclaimed in Paris.

29. Royal Albert Hall, Kensington, opened by the Queen.

April 1. University Boat-race won by Cambridge by about a length.
3. Census taken. The cost estimated at £100,000.
4. Plague of yellow fever at its height at Buenos Ayres; 30,000 deaths to this date.
6. Princess of Wales gave birth to a son, who died the next day.
-. Bach's Passion Music performed in Westminster Abbey with full band.
10. Volunteer Review at Brighton, 24,000 men under arms.
11. Earthquake in interior of China, extending over a circuit of 1,200 miles, and destroying 2,300 lives.
13. Synod of the Irish Church commenced sitting at Dublin.
—. Bank Rate of Discount reduced to 2½ per cent.
17. International Maritime Exhibition opened at Naples.
20. Mr. Lowe's Budget introduced, providing for a tax on lucifer-matches, the assessment of income-tax by percentage instead of poundage, and the doubling of succession and legacy duties payable on the devolution of property from parent to child.

May 1. Prince Arthur attained his majority.
—. The first of a series of Annual International Exhibitions opened at South Kensington by the Prince of Wales.
-. Mr. Lowe's Budget withdrawn, and a new one introduced, omitting the match-tax and the increase to the legacy and succession duties, and providing for the increase of the income-tax to 6*d.* in the pound.
8. Treaty between England and America resolving the Alabama question, signed at Washington.
-. Mr. Goschen's Local Taxation Bills, and Mr. Bruce's Licensing Scheme, withdrawn by Government.
9. Mr. Miall's proposition for the disestablishment of the English Church rejected by 374 to 89 in the House of Commons.
10. Serious rising of natives in Algeria reported.
—. Trial of Tichborne *v.* Lushington commenced in Court of Common Pleas.
12. Prince Bismarck announced the signing of the final Treaty of Peace between France and Germany.
16. The Vendôme Column destroyed by the Communists.
—. The ridge of the great Atlas, south of the city of Morocco, never before ascended by a European, scaled by Dr. Hooker, the Botanist.
21. Paris re-entered by the Government troops.
22. Duke of Edinburgh arrived in London, having been absent in the *Galatea* since 1868.
24. The Tuileries, the Palais Royal, and other public buildings in Paris burnt by the Communists.
27. Monsignieur Darboy, Archbishop of Paris, Abbé Deguerré, Curé of the Madeleine, President Bonjean, and 65 other hostages, shot by the Communists.
31. Henry Rochefort condemned to death by Court-martial at Versailles, and several hundreds of Communists shot. Total losses of Government troops in taking Paris estimated at 3,000 killed and wounded; at least 40,000 prisoners taken.

June 2. Snow fell in North Yorkshire.
-. Steam omnibus commenced running between Edinburgh and Portobello.
3. French Assembly resolved to rebuild the house of M. Thiers, destroyed by the Communists.
6. Degree of D.C.L. conferred on Dr. Döllinger, the Munich Theologian, by the University of Oxford.
7. Archbishop of Paris, and other ecclesiastics, who had been shot by the Communists, buried in Nôtre Dame.
8. The laws exiling the Orleans Princes from France abrogated by

the National Assembly, by 484 votes to 103, and their election pronounced valid by vote of 448 against 113.

15. Bank Rate of Discount reduced to 2½ per cent.
16. Triumphal entry of the Prussian Army into Berlin.
19. Triennial Handel Festival commenced at the Crystal Palace.
—. H.M.S. *Mægara* run on shore at St. Paul's Island. All hands saved.
20. Bill for exempting Charitable Institutions from local taxation rejected by the Commons by 116 to 68.
21. New buildings for St. Thomas's Hospital opened by the Queen.
—. New dockyard opened at Chatham, and the *Invincible* launched.
29. Emperor and Empress of Brazil arrived at Dover.

July 1. H.M.S. *Agincourt* ran aground on the Pearl Rock.
2. Victor Emmanuel, King of Italy, took formal possession of Rome.
3. Army Regulation Bill passed by the Commons.
6. Prince Imperial and Princess Royal of England arrived in London.
7. The Tichborne case adjourned.
12. Orange riots in New York, 81 persons killed, 175 wounded.
13. Freedom of the City of London presented to Prince Arthur.
—. Act disqualifying bankrupts to sit in House of Lords came into force.
—. Bank Rate of Discount reduced to 2 per cent.
15. Explosion of petroleum at Rheims, 50 persons killed and wounded.
—. Edmund Walter Pook acquitted of the murder of Jane Maria Clousen at Eltham, on 25th April.
17. Army Regulation Bill rejected in House of Lords by 155 to 130.
19. Signor Mario retired from the operatic stage at Covent Garden.
20. Mr. Gladstone announced the intention of Government to abolish purchase by Royal Warrant, in consequence of the rejection of the Army Regulation Bill by the Lords.
29. Dr. Döllinger, the leading opponent of the dogma of Papal Infallibility in Germany, elected Rector of Munich University.
30. Boiler of a ferry-boat exploded in New York harbour, 150 persons killed.
—. Dorsetshire visited by a severe tornado.
31. Annuity of £15,000 per annum voted to Prince Arthur; 11 votes against it in the Commons, and 51 in favour of its reduction to £10,000.
—. Prince of Wales, Prince Arthur, Princess Louise, and Marquis of Lorne, arrived at Kingstown on a state visit to Ireland.

Aug. 1. 269 School Boards formed in England and Wales to this date.
5. Foundation stone of Chelsea section of Thames Embankment laid by Lt.-Colonel Hogg.
7. Trial of the Communists commenced at Marseilles.
10. Ballot Bill thrown out of the Lords by a majority of two to one.
15. Centenary of Sir Walter Scott's birth celebrated in England, Scotland, and America, by numerous banquets and festivities.
20. Beethoven Centenary Festival (postponed from 1870, owing to the war) commenced at Bonn, the composer's birth-place, and continued for four days.
21. Parliament prorogued.
23. Public reception of Princess Louise and Marquis of Lorne at Inverary.
24. Schooner, with six or seven hands, run down by mail steamer *Belgique*, between Dover and Ostend; all lives lost.
—. International boat-race at St. John's, New Brunswick, the

English champion, Renforth, died a few minutes after the start.

Sept. 6. Colliery explosion at Wigan, upwards of seventy persons killed.
11. New Grammar School at Reading opened by Lord Chancellor.
16. Campaign under the Military Manœuvres Act of 1871 commenced.
17. Mont Cenis Railway Tunnel opened, the works having been in progress uninterruptedly night and day since 1857.
—. French Assembly adjourned to 4th December, leaving at Versailles a commission of twenty-five to watch over the course of the Government during the recess, in accordance with the provisions of the Constitution of 1849.
—. First instalment of the war indemnity, amounting to 113,000,000 francs, received from French Government by the Germans, forming the largest sum yet paid down in one day.
20. French forts made over by Germans to the French troops.
—. First modern diocesan synod at Lincoln opened.
—. Mr. Justice Norman assassinated at Calcutta,
21. Hurricane in the West Indies.
22. Bank rate of discount raised to 3 per cent.
27. Bill for the emancipation of slaves in Brazil passed in Senate.
28. Bank rate of discount raised to 4 per cent.

Oct. 7. Bank rate of discount raised to 5 per cent.
8. Great fire at Chicago broke out.
28. Mr. Gladstone addressed his constituents on Blackheath, the audience being estimated at 15,000 persons.
—. Dr. Jermyn, vicar of Barking, consecrated Bishop of Colombo, in the room of Bishop Claughton.
31. Warrant containing regulations as to commissions in the Army published in the *London Gazette*.

Nov. 4. New street from Blackfriars Bridge to the Mansion House publicly opened.
—. The gift of Columbia Market for use as a fish market publicly accepted by the Lord Mayor and Corporation.
—. The German Reichstag passed by a considerable majority the bill for providing the Empire with an Imperial War Fund.
6. Sittings of the Judicial Committee of the Privy Council recommenced, Sir J. W, Colvile and Sir M. E. Smith taking their seats as two of the paid judges appointed under 34 & 35 Vict. cap. 91.
7. The appointment of Sir J. W. Colvile and Sir M. E. Smith as Privy Council Judges under 34 & 35 Vict. cap. 91, and of Sir R. P. Collier as a puisne judge of the Court of Common Pleas, announced in the *London Gazette*.
—. A course of evening lectures to young men on social questions of the day commenced at St. Paul's Cathedral by Canon Gregory.
—. Hearing of the case of Tichborne v. Lushington resumed after the vacation.
—. Count Beust resigned office as Chancellor of the Austrian Empire.
8. Terrible explosion of fire-damp at St. Etienne, upwards of 50 persons killed.
11. Sir William Stirling-Maxwell elected Rector of the University of Edinburgh by a majority of 92 votes over Sir Roundell Palmer.
13. Bishop of London's Primary Visitation commenced in St. Paul's Cathedral.

NECROLOGICAL TABLE

OF DISTINGUISHED AND NOTABLE MEN WHO DIED 1870-71.

1870.		Age.
Nov.	4. BATES, Thomas, formerly state postilion to George III, and three succeeding monarchs; at New Wandsworth .	90
	14. MYERS, Rev. C. J., formerly Fellow of Trinity College, Cambridge, and author of an 'Elementary Treatise on the Differential Calculus,' at one time a text book in the University. He was 5th Wrangler in 1823, when Professor Airey was Senior Wrangler; at Hintham, Newark	70
	17. DUNSTERVILLE, Colonel J. B., C.S.I., Commissary General of the Bombay Army; at sea	49
	21. HOWARD, Mrs. Una, originator of the Self-help Institute for Gentlewomen; at Pimlico	
	—. PLUMPTRE, Rev. F. C., D.D., Master of University College, Oxford, and Vice-Chancellor 1848–51; at Oxford . .	74
	23. BARKER, Professor, of the Congregational College, Spring Hill; in London	71
	27. CORBALLY, M. E., M.P. for Meath, 1842-70; at Corbalton Hall, Meath	72
	—. STUART-WORTLEY, Hon. F. F., Diplomatist, accompanied Lord Elgin to China in 1860, and Earl Cowper to Copenhagen in 1865; at London	37
	—. HALE, Venerable W. H., M.A., Archdeacon of London, and Canon of St. Paul's 1842-70, Preacher at Charterhouse 1823-42, and afterwards master, author; at Charterhouse, London	75
	28. HODGSON, Rev. John, M.A., Secretary and chief promoter of Clergy Mutual Life Assurance Society; at Westminster	80
	—. MINARDI, Tommaso, artist and fresco painter, head of the Modern Italian 'Purists'	
Dec.	5. QUIN, Michael, Admiral, present at the seige of Copenhagen in 1807; at Holloway	80
	7. TOOGOOD, Jonathan, M.P., originator of the Bridgwater Infirmary, and Senior Fellow of the Royal College of Surgeons of England; at Torquay	86
	—. CRAUFURD, Clifford, Secretary to the East India Company; at Kensington	64
	8. AINMULLER, Max Emanuel, Bavarian painter on glass; at Munich	62
	—. BRASSEY, Thomas, railway contractor; at St. Leonard's-on-Sea	75
	9. MIOZA KAGLON BEY, Tartar Professor and Orientalist; at St. Petersburg	
	—. MCDOWELL, Patrick, R.A., sculptor, his last work was the group typical of Europe, in the Albert Memorial, Hyde Park; at London	70
	10. HARCOURT, Rev. Charles Vernon, M.A., Canon of Carlisle, 1837-70; at Carlisle	72
	12. READE, Rev. Jos. Bancroft, M.A., F.R.S., President of the Microscopical Society; at Bishopsbourne, Kent . .	71
	13. PORCELLI ANTONIO, Italian landscape and figure-painter; at Rome	70
	13. BOTT, Thomas, painter on porcelain, of Worcester . .	41
	17. MERCADANTE, musical composer; at Naples	72

Age.

Dec. 25. BREWER, Thomas, President and one of the founders of the Sacred Harmonic Society, and Secretary of the City of London School; in London 63
28. HARDWICK, Philip, R.A., F.R.S., architect of St. Katherine's Docks, Euston Square Station, Goldsmiths' Hall, and other works in the classic style; at London . . 79
29. VAN SCHENDL PETRUS, Belgian painter, chiefly of sacred works; at Brussels 65
30. PRIM, Marshal, President of the Spanish Council of Ministers; at Madrid 54

1871.

Jan. 1. MUNRO, Alexander, sculptor; at Cannes 45
—. DURAND, Sir Henry Marion, K.C.S.I., Lieutenat Governor of the Punjab, crushed by an elephant; in India . . .
7. SMITH, John Abel, formerly M.P. for Chichester, and head of the banking firm of Smith, Payne & Co.; at Kippington, near Sevenoaks 68
10. AYLESFORD, Earl of, M.P. for South Warwickshire, 1849-57; in London 47
—. HARLEY, George, artist; at Kentish Town 80
—. FRODSHAM, Charles, F.R.A.S.; in London. . . . 60
12. ALFORD, Henry, D.D., Dean of Canterbury, author of many theological and other works, editor of 'Contemporary Review; at Canterbury 60
13. MAYO, Thomas, M.D., F.R.S., sometime President of the College of Physicians; at Corsham 81
14. HANMER, T. W., M.A., Vicar of Little Mixenden for 60 years, rector of Simpson for 25 years, oldest clergyman in diocese of Oxford 92
—. DALTON, Charles, Major-General, R.A., served at Walcheren and Flushing; at Lymington 82
16 FIFE, Sir John, physician, knighted for his conduct during the Chartist riots; at Newcastle 75
17. SMITHETT, Sir Luke, Commander of Her Majesty's packets, 1825-54, pilot of the Royal Yacht; at Dover . . . 70
18. HAYTER, Sir George, K.S.I., principal painter in ordinary to Her Majesty; in London 78
19. DENISON, Sir W., General, Governor of Tasmania, New South Wales, and Madras, and Governor-General of India from death of Lord Elgin to arrival of Lord Lawrence; at East Sheen 66
—. REGNAULT, Alexander G. Henri, French painter; killed while serving in Garde Nationale 24
20. SURMAN, Joseph, founder of the Exeter Hall Oratorios; in London 76
—. VERNER, Sir W., Bart., Colonel, served in Peninsular and at Waterloo, M.P. for Armagh for 40 years . . . 78
21. TEMPLE, Christopher, Q.C., Chancellor of the County Palatine of Durham, after 63 years' service at the bar; at London 86
22. EYRE, Vincent W., Roman Catholic Priest; at Hampstead 55
25. CAUTLEY, Sir Proby, K.C.B., General, served in Bengal Artillery, 1819-54, Member of Council of India, 1858-68; at Sydenham 68
26. RIDOUT, Rev. George, for 38 years vicar and 58 years lecturer of Newland, Gloucestershire; at Newland . . 82
26. TICKNOR, George, American author, and founder of the Boston Public Library; 80
27. BAVARIA, Duke of, heir presumptive to the throne, killed by a franc-tireur; near Beglie 23

			Age.
Jan.	30.	HOLL, William, engraver; at London	64
	31.	DU TERRAIL, Viscount Pierre Alexis Ponson, French author of dramatic romances; in France	72
Feb.	3.	ROBERTSON, Thomas W., dramatic author; at Haverstock Hill	42
	5.	LOCKETT, Joseph, inventor of improvements in calico printing; at Dunoon	68
	9.	CHAYTOR, Sir W. R. C., M.P. for Durham, in first Parliament of the Old Reform Bill; at Scrafton Lodge	65
	—.	MELVILL, Henry, B.D., Canon of St. Paul's; at residence, St. Paul's	72
	—.	APPLEGARTH, Augustus, inventor of the composition ball and roller, of the steam printing press, and of bank notes incapable of being forged; at Dartford	84
	12.	GREENWOOD, John, Q.C., Solicitor to the Treasury; at Pimlico	70
	14.	SIDEBOTHAM, James, first M.P. for Staleybridge, recently enfranchised; at Staleybridge	46
	21.	GIRAUD, Victor, French painter; at Paris	
	22.	RAMSAY, Sir George, author of works on Political Economy; at Banff	70
	23.	BECKWITH, William, General, served in Peninsular war, and at Waterloo, and was chiefly instrumental in quelling riot at Bristol in 1831; at Sunderland	75
	25.	ALIGNY, Felix Claude Theodore, French painter; at Lyons	73
	25.	SYMONDS, Dr., physician; at Bristol	63
March	1.	STERLING, Sir Anthony Coningham, K.C.B., Colonel, served in Crimea and during the Indian Mutiny; at Knightsbridge	66
	2.	SHEPHERD, Rev. C. P., M.A., vicar of St. Catherine Cree, London, and sometime editor of the *English Churchman;* at Eastbourne	51
	4.	DOXAT, Lewis, journalist, on staff of *Morning Chronicle* for 25 years, and editor of the *Observer* for 58 years; at Haverstock Hill	98
	5.	LOW, Sampson, junior, publisher, of the firm of Sampson Low, Son, & Marston, editor of 'the Charities of London;' at Mecklenburg Square, London	48
	7.	BLACKETT, Henry, publisher, of the firm of Hurst and Blackett; at Ealing	45
	10.	FARQUHARSON, J. J., the last member of the old hunting school, of which Osbaldiston and Assheton Smith were types; at Langton, Dorset	86
	13.	EDMONSTONE, Sir Archibald, Baronet, author, at Belgrave Square	76
	16.	BENNETT, William, water-colour painter; at Clapham	60
	17.	CHAMBERS, Robert, LL.D., author and publisher, originator of the 'Edinburgh Journal;' at St. Andrew's	69
	18.	DE MORGAN, Augustus, Professor of Mathematics at London University, author of a treatise on Differential and Integral Calculus, &c.; at Camden Town	64
	21.	CHAMBERS, David N., publisher, brother of Dr. R. Chambers; at Lee, Kent	51
	23.	SCHULTZ-SCHULTZENSTEIN, Karl Heinrich, German botanist; at Berlin	72
	24.	AGNEW, Thomas, picture collector and dealer; at Manchester	76
	24.	NICOL, George, secretary to the British Institution; at Marylebone	63

		Age.
March 26.	HOWES, Edward, M.P. for South Norfolk, and Chancellor of the diocese of Norwich; at Mornin gthorpe	58
28.	FETIS, Francois Joseph, composer and musical critic, head of the Brussels Conservatoire; at Brussels	87
—.	WILLEMENT, J. N. P., artist in stained glass, author of works on heraldry; in Kent	
—.	GERVINUS, George Gottfried, German historian	66
29.	REDDIE, James, Deputy Controller of Navy Pay in the Admiralty and founder of the Victoria Institute; at Hammersmith	
30.	WILHELMINA, Queen of Sweden; at Stockholm	43
April 3.	MAGNAY, Sir W., Baronet, Lord Mayor of London 1843-4, created a baronet at opening of Royal Exchange by the Queen in 1844; at Bedford	74
4.	HESS, Peter, Von, German figure-painter, celebrated for his battle pieces; at Munich	79
8.	HAUSMAN, Emanuel, formerly professor in University of London	82
9.	CHATTERTON, J. B., harpist to the Queen, and professor at Royal Academy of Music; in London	67
11.	GOODALL, Frederick Trevelyan, painter; at Capri	23
—.	BURNS, James, publisher; at Portman Square	63
19.	LEROUX, Pierre, French journalist and critic; at Paris	73
23.	PALMER, Sir J. F., late President of the Legislative Council of Victoria; at Melbourne	67
27.	THALBERG, Sigismond, pianist and composer; at Posilippo, near Naples	59
30.	DESCHAMPS, Emile, French poet and librettist; founder of the 'Muse Française'; at Versailles	80
May 7.	YATES, James, M.A., F.R.S., a prominent advocate of the metric system of weights and measures; at Highgate	82
11.	HERSCHEL, Sir John F. W., astronomer; at Collingwood	79
12.	POTTER, George W. K., Secondary of the city of London, draughtsman and musician	
13.	AUBER, Daniel François Esprit; French operatic composer; at Paris	87
15.	FERRAR, William Hugh, M.A., Fellow and Professor of Latin at Trinity College, Dublin; at Sydney, N.S.W.	35
17.	BROTHERTON, James, Receiver General of Inland Revenue; at Highgate	56
21.	BRAMSTON, T. W., M.P. for South Essex, 1835-65; at Eccleston Square	74
23.	BLACKER, George, M.A., for 32 years rector of Maynooth, and prebendary of St. Patrick's, Dublin; at Maynooth	79
25.	GLIEMANN, Albert, portrait painter; at Dresden	50
—.	MOSLEY, Sir Oswald, Baronet, antiquary and historian; at Rolleston Hall, Staffordshire	86
26.	INGRAM, Hugo Meynell, M.P. for West Staffordshire; at Wilton Crescent	51
27.	CAUSTON, Sir Joseph, Alderman, and lately Sheriff of the city of London; at Champion Hill	55
30.	WATSON, James, M.D., 'Father of the Faculty;' at Glasgow	84
June 1.	BURNABY, Richard Beaumont, Lieutenant-General, R.A., at Southampton	78
4.	RUDSDELL, Sir Joseph, Knight Commander of St. Michael and St. George; at Beckingham	88
4.	SCULLY, Vincent, for many years M.P. for Cork County; in London	60

		Age
June	6. ROLT, Sir John, Lord Justice of Appeal; at Ozleworth, Gloucester	67
	18. HUXTABLE, Right Rev. Henry Constantine, Bishop of Mauritius; at Port Louis	45
	19. GROTE, George, historian; at Savile Row	77
	—. HARTOG, Numa Edward, B.A.; at Belsize Square	25
	21. HOUDIN, Robert, celebrated conjuror; at Blois	66
	23. BEALE, Lionel J., M.R.C.S.; at Long Acre	74
July	1. TEXIER, French archæologist, author of works on Asia Minor; at Paris	68
	7. WALKER, John David, proprietor of the *Gloucester Journal*, and oldest newspaper proprietor in England; at Gloucester	80
	9. JOHNSTON, Alexander Keith, LL.D., geographer; at Ben Rhydding	67
	—. TURNER, William West, K.C.S.I., C.B., Colonel, served in Crimea and Indian Mutiny; at Naples	49
	24. MATTHEWS, Frank, actor; at Bayswater	65
	26. SLIDELL, Hon. John, Commissioner of Confederate States to France; at Cowes	78
	28. WARTER, Edith Mary, daughter of the poet Southey, and editor of his 'Doctor,' 'Common Place Book,' and 'Letters'; at West Tarring	66
Aug.	1. MANSEL, Henry, Longueville, D.D., Dean of St. Paul's; at Cosgrove Hall	51
	3. HALL, John, B.D. Hon. Canon of Bristol; at Bristol	91
	7. KINGCOME, Sir J., K.C.B., Admiral, entered navy as second class volunteer in 1808, and rose from the ranks; at Plymouth	77
	10. BUXTON, Charles, M.P. for East Surrey; in Scotland	48
	16. FORBES, George, Professor of Logic and Moral Philosophy in McGill College, Montreal; at Coupar Angus	30
	20. FORSTER, Charles, B.D., Rector of Stisted, one of the six preachers at Canterbury Cathedral, and author of theological works; at Stisted	84
	26. SOWERBY, James de Carle, Naturalist; last survivor of the founders of the Botanic Gardens, Regent's Park	
	30. SALTER, Hyde, M.D., Physician; at Harley Street, London	46
Sept.	1. PENNETHORNE, Sir James, Government architect; in Surrey	70
	5. STRANGE, William, Publisher; in London	70
	7. MORTIMER, Rev. G. F. W., D.D., Prebendary of St. Paul's, late Head Master of City of London School; at Hampton	67
	–. ALLHUSEN, Lieutenant-Colonel Henry, one of the chief promoters of Volunteer Artillery in England; at Newcastle	35
	–. HODGE, G., naturalist; at Seaham	38
	–. BREWER, Robert, seaman; served in Admiral Byng's flagship at mutiny of Nore, and in Lord Howe's fleet on 1st June, 1794; at Portsea	106
	8. GOUGH, Alexander Dick, architect; at Tollington Park, London	67
	9. JEREMIE, Peter, Queen's Solicitor-General in Court of Guernsey; at Guernsey	65
	10. BENTLEY, Richard, publisher, and founder, in conjunction with Charles Dickens, of Bentley's Miscellany; at Ramsgate	77
	16. ARCHDALL-GRATWICKE, Rev. G., D.D., for thirty-five years Master of Emmanuel College; at Cambridge	84

			Age.
Sept.	17.	HAMILTON, Right Honourable G. H., Member of the Irish Church Temporalities Commission, and formerly Financial Secretary to the Treasury; at Kingstown	69
	18.	JELF, Rev. R. W., D.D., Canon of Christ Church, Oxford, and many years Principal of King's College, London; at Oxford	73
	21.	CRONYN, Right Rev. Dr. Benjamin, Bishop of Huron; at Ontario	70
	24.	ROSCOE, Thomas, author; at St. John's Wood	81
	—.	SOLLY, Samuel, F.R.S., at Savile Row	66
Oct.	2.	DEANE, Sir Thomas, Irish architect; at Dublin	79
	4.	DENISON, James, solicitor, for upwards of forty years reporter for the *Times* on the Western circuit; at South-end	37
	7.	BURGOYNE, Sir John, G.C.B., Field-Marshal, Constable of the Tower; at London	90
	11.	PILGRIM, Thomas, engineer; one of the chief promoters of the use of the screw propeller; at Plumstead	71
	13.	MOON, Sir F. G., Bart., Alderman of London, and Lord Mayor in 1854; at Brighton	76
	15.	YOUNG, Richard, Sheriff of London, elected only two days before his death, formerly M.P. for Cambridgeshire; at Buckingham Palace-road	62
	18.	BABBAGE, Charles, F.R.S., mathematician; at Dorset-square	79
	20.	TEED, John, Q.C., County Court Judge; at Slough	79
	21.	ROBINSON, John Henry, line engraver, at Petworth	75
	22.	MURCHISON, Sir R., Bart., F.R.S., President of Geological and Geographical Societies; at Belgrave-square	79
	—.	BAXTER, William, curator of the Botanic Gardens, Oxford, and author; at Oxford	84
Nov.	1.	GREENWOOD, Thomas, M.A., Bencher of Gray's Inn, Fellow and Reader in History in Durham University; at Westbourne Terrace	71
	4.	WYNTER, Rev. Dr. Philip, President of St. John's College, Oxford; at Oxford	78
	6.	FENTON, William, for many years editor and proprietor of the *Dover Chronicle*; at Southwark	71

NOTE.—The Necrological Table here given, contains the names of 160 distinguished persons of all countries, who died during the twelve months from the commencement of November, 1870, to the middle of November, 1871. Of this number, no less than thirty-two, or 20 per cent., died at the age of 80 or more, while five were upwards of 90, and one—an old seaman who had served at the mutiny of the Nore—reached the well-ascertained age of 106,—this fact solving some expressed doubts as to the existence of "centenarians."

DATES and DURATION of MINIMUM RATES of BANK OF ENGLAND DISCOUNT, from 1773 to October, 1871, inclusive.

Year.	Date.	P. Ct.	Year.	Date.	P. Ct.	Year.	Date.	P. Ct.
1773	May 13	5	1857	November 5	9	1864	September 8	9
1822	June 20	4	,,	November 9	10	,,	November 10	8
1825	December 13	5	,,	December 24	8	,,	November 24	7
1827	July 5	4	1858	January 7	6	,,	December 15	6
1836	July 21	4½	,,	January 14	5	1865	January 12	5½
,,	September 1	5	,,	January 28	4	,,	January 26	5
1838	February 15	4	,,	February 4	3½	,,	March 2	4½
1839	May 16	5	,,	February 11	3	,,	March 30	4
,,	June 20	5½	,,	December 9	2½	,,	May 4	4½
,,	August 1	6	1859	April 28	3½	,,	May 25	4
1840	January 23	5	,,	May 5	4½	,,	June 1	3½
1841	June 3	5	,,	June 2	3½	,,	June 15	3
1842	April 7	4	,,	June 9	3	,,	July 27	3½
1845	March 13	2½	,,	July 14	2½	,,	August 3	4
,,	October 16	3	1860	January 19	3	,,	September 28	4½
,,	November 6	3½	,,	January 31	4	,,	October 2	5
1846	August 27	3	,,	March 29	4½	,,	October 5	6
1847	January 14	3½	,,	April 12	5	,,	October 7	7
,,	January 21	4	,,	May 10	4½	,,	November 23	6
,,	April 8	5	,,	May 24	4	,,	December 28	7
,,	August 2	6	,,	November 8	4½	1866	January 4	8
,,	August 5	5½	,,	November 13	5	,,	February 22	7
,,	October 1	6½	,,	November 15	6	,,	March 15	6
,,	October 25	8	,,	November 29	5	,,	May 3	7
,,	November 22	7	,,	December 31	6	,,	May 8	8
,,	December 2	6	1861	January 7	7	,,	May 11	9
,,	December 23	5	,,	February 14	8	,,	May 12	10
1848	January 27	4	,,	March 21	7	,,	August 16	8
,,	June 15	3½	,,	April 4	6	,,	August 23	7
,,	November 22	3	,,	April 11	5	,,	August 30	6
1849	November 22	2½	,,	May 16	6	,,	September 6	5
1850	December 26	3	,,	August 1	5	,,	September 27	4½
1852	January 1	2½	,,	August 15	4½	,,	November 8	4
,,	April 22	2	,,	August 29	4	,,	December 20	3½
1853	January 6	2½	,,	September 19	3½	1867	February 7	3
,,	January 20	3	,,	November 7	3	,,	May 30	2½
,,	June 2	3½	1862	January 9	2½	,,	July 25	2
,,	September 1	4	,,	May 29	3	1868	November 19	2½
,,	September 15	4½	,,	July 10	2½	,,	December 3	3
,,	September 29	5	,,	July 24	2	1869	April 1	4
1854	May 11	5½	,,	October 30	3	,,	May 6	4½
,,	August 3	5	1863	January 15	4	,,	June 10	4
1855	April 5	4½	,,	January 28	5	,,	June 24	3½
,,	May 3	4	,,	February 19	4	,,	July 15	3
,,	June 14	3½	,,	April 23	3½	,,	August 19	2½
,,	September 6	4	,,	April 30	3	,,	November 4	3
,,	September 13	4½	,,	May 16	3½	1870	July 21	3½
,,	September 27	5	,,	May 21	4	,,	July 23	4
,,	October 4	5½	,,	November 2	5	,,	July 28	5
,,	October 18	7	,,	November 5	6	,,	August 4	6
1856	May 22	6	,,	December 2	7	,,	August 11	5½
,,	May 29	5	,,	December 3	8	,,	August 19	4½
,,	June 26	4½	,,	December 24	7	,,	August 25	4
,,	October 1	5	1864	January 20	8	,,	September 1	3½
,,	October 6	7	,,	February 11	7	,,	September 15	3
,,	November 13	7	,,	February 25	6	,,	September 29	2½
,,	December 4	6½	,,	April 17	7	1871	March 2	3
,,	December 18	6	,,	May 2	8	,,	April 13	2½
1857	April 2	6½	,,	May 5	9	,,	June 15	2½
,,	June 18	6	,,	May 19	8	,,	July 13	2
,,	July 16	5½	,,	May 26	7	,,	September 22	3
,,	October 8	6	,,	June 16	6	,,	September 28	4
,,	October 12	7	,,	July 25	7	,,	October 7	5
,,	October 19	8	,,	August 4	8			

INDEX

TO

'THE BRITISH ALMANAC' & 'COMPANION TO THE ALMANAC

(The figures in parentheses refer to the pages of the 'BRITISH ALMANAC,' *and those not so marked to the separately numbered pages of the* 'COMPANION TO THE ALMANAC.')

	PAGE
Abstracts of Acts of Parliament	214–235
,, Parliamentary and other Official Documents	236–274
Agriculture, statistics of	250–253
Ambassadors, foreign, in England	(93)
Architecture and Public Improvements, by James Thorne	140–177
Army agents	(71)
Army, general officers of, British	(67)
,, ,, ,, Indian	(69)
Army & Navy, Statutes relating to	214–215
Assessed Taxes and Licenses, tables of	(83)
Bank of England, Directors of	(80)
,, ,, transfer days at	(13)
Banks and Bankers in London	(80)
Bishops of Church of England	(56)
,, ,, Ireland	(57)
,, ,, Scotland	(57)
,, ,, in Colonies	(57)
Calendar for 1872	(14)
Cambridge University	(59)
Census of 1871, The, by Robert Smiles	123–139
Charities, Metropolitan, by Charles Mackeson	178–203
Chronicle of Events and Occurrences, 1870–71	275–280
Church and Education, Statutes regarding	215–219
Circuits of the Judges	(76)
Colonial Governors	(53)
Commons, House of	(45)
Commerce and Navigation, Statistics of	243–249
Corporation of London	(92)
Correspondence of Eras with 1872	(3)
County Courts in England and Wales	(73)
Courts of Law in England	(73)
Crime and Pauperism, Statutes regarding	219–223
,, ,, Statistics of	259–264
Currency, Statistics of	242
Dublin University	(66)
Durham University	(60)
Eclipses in 1872	(11)
Education, Statistics of	264–267
Emigration, Statistics of	268–270
Exhibitions in and near London	(94)
Finance and Taxation, Statutes relating to	223–224
,, ,, Statistics of	236–242
Fine Arts at the International Exhibition, by Arthur Locker	23–48
High Water at the London Docks	(6)
,, Out ports	(5)
Holidays at Public Offices	(13)
House of Commons	(45)
,, Lords	(40)
Industrial Results of Photography, by John Plummer	66–78
Inns of Court	(76)
Insurance Companies	(82)
Irish Bishops	(57)
Irish Lords Lieutenant	(53)
,, Universities	(66)
Judicial Statistics	274
Largest Book in the World, by W. E. A. Axon	105–123
Law and Justice, Statutes relating to	224–226
Legislation of 1871	204–213
Licenses and Assessed Taxes	(83)
Local Government, Statutes relating to	230–234
London, Corporation of	(92)
,, School Board	(92)
,, University	(60)
Lords Lieutenant, England and Wales	(52)
,, Ireland	(53)
,, Scotland	(52)
Metropolitan Charities at the Present Day, by Charles Mackeson	178–203
Ministry, The	(39)
Miscellaneous Statistics	273–274
Moonlight, Table of Duration of	(10)
Music in England, present State of, by Charles Mackeson	49–78
Navy, Flag Officers	(70)
,, Agents	(71)
Necrological Table (1870–71)	281–286
Notes for the Year	(11)
Occultation of Stars	(8)
Oxford University	(58)
Patents, Notes on the Specifications of British, from 1617–1869, by W. E. A Axon	105–123
Pauperism, Statutes relating to	219–223
,, Statistics of	263–264
Peers, House of	(40)
Philosophy of Statistics, on the, by W. S. B. Woolhouse	5–22
Photography, Industrial Results of, by John Plummer	66–78
Population, Statistics of	254–259
Post Office, Statistics of	270–272
,, ,, Information relating to	(87)
Postal Telegraph System, by George Dodd	79–105
Present State of Music in England, by Charles Mackeson	49–78
Quarter Sessions in 1872	(12)
Royal Family, Members of,	(38)
,, Households	(38)
Scotland, Established Church of,	(57)
,, Episcopal ,,	(57)
,, Lords Lieutenant of	(52)
,, Universities and Colleges	(65)
Social Economy, Statistics of	267–268
Sovereigns and Governors of Countries	(92)
Statistics, on the Philosophy of, by W. S. B. Woolhouse	5–22
Sun, Table of Rising and Setting	(2)
Terms and Returns in 1872	(13)
Trade and Agriculture, Statistics of,	250–254
,, Shipping, Statutes relating to,	226–230
Transfer days at Bank	(13)

BRITISH MUSEUM 24 JA 72

THE

BRITISH ALMANAC,

OF

THE SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE,

FOR THE YEAR OF OUR LORD

1871,

BEING THE THIRD AFTER BISSEXTILE OR LEAP-YEAR;

CONTAINING

THE CALENDAR OF REMARKABLE DAYS AND TERMS;

MONTHLY NOTICES, SUNDAY LESSONS;

METEOROLOGICAL TABLES AND REMARKS;

Astronomical Facts and Phenomena;

TABLES OF THE

SUN, MOON, AND TIDES;

WITH

A MISCELLANEOUS REGISTER OF INFORMATION

CONNECTED WITH GOVERNMENT, LEGISLATION, COMMERCE, AND EDUCATION; AND

VARIOUS USEFUL TABLES.

LONDON:

PRINTED FOR

THE COMPANY OF STATIONERS,

AND SOLD BY J. GREENHILL, AT THEIR HALL, LUDGATE HILL.

Price One Shilling.

Or Four Shillings bound in Cloth, with the 'Companion to the Almanac.'

INDEX

TO

'THE BRITISH ALMANAC' & 'COMPANION TO THE ALMANAC'

(The figures in parentheses refer to the pages of the 'British Almanac,' *and those not so marked to the separate paginal pages of the* 'Companion to the Almanac.')

PAGE

Abstracts of Acts of Parliament . 214–235
.. Parliamentary and other Official Documents 236–274
Agriculture, statistics of 250–253
Ambassadors, foreign, in England . (93)
Architecture and Public Improvements, by James Thorne . . 140–177
Army agents . . . . . (71)
Army, general officers of, British . (67)
.. .. .. Indian . (69)
Army & Navy, Statutes relating to 214–215
Assessed Taxes and Licenses, tables of (83)
Bank of England, Directors of . . (80)
.. .. transfer days at . (13)
Banks and Bankers in London . . (80)
Bishops of Church of England . . (56)
.. .. Ireland . . (57)
.. .. Scotland . . (57)
.. .. in Colonies . . (57)
Calendar for 1872 . . . . . (11)
Cambridge University . . . . . (59)
Census of 1871, The, by Robert Smiles 123–139
Charities, Metropolitan, by Charles Mackeson 178–203
Chronicle of Events and Occurrences, 1870–71 275–280
Church and Education, Statutes regarding 215–219
Circuits of the Judges . . . . . (76)
Colonial Governors . . . . . (53)
Commons, House of . . . . . (45)
Commerce and Navigation, Statistics of 243–249
Corporation of London . . . . . (92)
Correspondence of Eras with 1872 . (3)
County Courts in England and Wales (73)
Courts of Law in England . . . . (73)
Crime and Pauperism, Statutes regarding 219–223
.. .. Statistics of 259–264
Currency, Statistics of 242
Dublin University . . . . . (66)
Durham University . . . . . (60)
Eclipses in 1872 . . . . . (11)
Education, Statistics of 264–267
Emigration, Statistics of 268–270
Exhibitions in and near London . . (94)
Finance and Taxation, Statutes relating to 223–224
.. .. Statistics of 236–242
Fine Arts at the International Exhibition, by Arthur Locker. . . 23–48
High Water at the London Docks . (6)
.. Out ports . . . (5)
Holidays at Public Offices . . . . (13)
House of Commons . . . . . (45)
.. Lords . . . . . (40)
Industrial Results of Photography, by John Plummer 66–78
Inns of Court . . . . . (76)
Insurance Companies . . . . . (82)
Irish Bishops . . . . . (57)

PAGE

Irish Lords Lieutenant . . . . . (53)
.. Universities . . . . . (66)
Judicial Statistics 274
Largest Book in the World, by W. E. A. Axon 105–123
Law and Justice, Statutes relating to 224–226
Legislation of 1871 204–213
Licenses and Assessed Taxes . . . (83)
Local Government, Statutes relating to 230–234
London, Corporation of . . . . . (92)
.. School Board . . . . . (92)
.. University . . . . . (60)
Lords Lieutenant, England and Wales (52)
.. Ireland . . . . (53)
.. Scotland . . . . (52)
Metropolitan Charities at the Present Day, by Charles Mackeson . . 178–203
Ministry, The . . . . . (39)
Miscellaneous Statistics 273–274
Moonlight, Table of Duration of . . (10)
Music in England, present State of, by Charles Mackeson 49–78
Navy, Flag Officers . . . . . (70)
.. Agents . . . . . (71)
Necrological Table (1870–71) . . 281–286
Notes for the Year . . . . . (11)
Occultation of Stars . . . . . (8)
Oxford University . . . . . (58)
Patents, Notes on the Specifications of British, from 1617–1869, by W. E. A Axon 105–123
Pauperism, Statutes relating to . 219–223
.. Statistics of 263–264
Peers, House of . . . . . (40)
Philosophy of Statistics, on the, by W. S. B. Woolhouse 5–22
Photography, Industrial Results of, by John Plummer 66–78
Population, Statistics of 254–259
Post Office, Statistics of 270–272
.. .. Information relating to . (87)
Postal Telegraph System, by George Dodd 79–105
Present State of Music in England, by Charles Mackeson 49–78
Quarter Sessions in 1872 . . . . . (12)
Royal Family, Members of, ... (38)
.. Households . . . . (38)
Scotland, Established Church of, . . (57)
.. Episcopal .. .. . . (57)
.. Lords Lieutenant of . . . (52)
.. Universities and Colleges . (65)
Social Economy, Statistics of . . 267–268
Sovereigns and Governors of Countries (92)
Statistics, on the Philosophy of, by W. S. B. Woolhouse 5–22
Sun, Table of Rising and Setting . . (2)
Terms and Returns in 1872 . . . . (13)
Trade and Agriculture, Statistics of, 250–254
.. Shipping, Statutes relating to, 226–230
Transfer days at Bank . . . . . (13)

THE

BRITISH ALMANAC,

OF

THE SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE,

FOR THE YEAR OF OUR LORD

1871,

BEING THE THIRD AFTER BISSEXTILE, OR LEAP-YEAR;

CONTAINING

THE CALENDAR OF REMARKABLE DAYS AND TERMS;

MONTHLY NOTICES, SUNDAY LESSONS;

METEOROLOGICAL TABLES AND REMARKS;

Astronomical Facts and Phenomena;

TABLES OF THE

SUN, MOON, AND TIDES;

WITH

A MISCELLANEOUS REGISTER OF INFORMATION

CONNECTED WITH GOVERNMENT, LEGISLATION, COMMERCE, AND EDUCATION; AND

VARIOUS USEFUL TABLES.

LONDON:

PRINTED FOR

THE COMPANY OF STATIONERS,

AND SOLD BY J. GREENHILL, AT THEIR HALL, LUDGATE HILL.

Price One Shilling.

Or Four Shillings bound in Cloth with the 'Companion to the Almanac.'

THE FORTY-FIFTH YEAR.

THE

Companion to the Almanac;

OR,

YEAR-BOOK

OF

GENERAL INFORMATION

FOR THE YEAR OF OUR LORD

1872.

CONTENTS.

ON THE PHILOSOPHY OF STATISTICS. By *W. S. B. Woolhouse, F.R.A.S., F.S.S.*
THE FINE ARTS AT THE INTERNATIONAL EXHIBITION. By *Arthur Locker.*
THE PRESENT STATE OF MUSIC IN ENGLAND. By *Charles Mackeson.*
INDUSTRIAL RESULTS OF PHOTOGRAPHY. By *John Plummer.*
THE POSTAL TELEGRAPH SYSTEM. By *George Dodd.*
THE LARGEST BOOK IN THE WORLD. By *William B. A. Axon, F.R.S.L.*
THE CENSUS OF 1871. By *Robert Smiles.*
ARCHITECTURE AND PUBLIC IMPROVEMENTS. By *James Thorne.*
METROPOLITAN CHARITIES AT THE PRESENT DAY. By *Charles Mackeson.*

TABLE OF ACTS OF THE SESSION OF 1871.
ABSTRACTS OF IMPORTANT ACTS.
ABSTRACTS OF PARLIAMENTARY DOCUMENTS.
CHRONICLE OF EVENTS AND OCCURRENCES.
NECROLOGICAL TABLE OF DISTINGUISHED PERSONS, 1870-71.
FLUCTUATIONS OF THE BANK RATE OF DISCOUNT.

LONDON:

PRINTED FOR

THE COMPANY OF STATIONERS,

AND SOLD BY J. GREENHILL, AT THEIR HALL, LUDGATE HILL.

Price Two Shillings and Sixpence;

Or, with the 'British Almanac,' Bound in Cloth, Four Shillings.

WHELPTON'S

Are warranted not to contain a single particle of MERCURY or any other MINERAL SUBSTANCE, but to consist entirely of Medicinal Matters, PURELY VEGETABLE.

During the last thirty-five years they have proved their value in thousands of instances in diseases of the Head, Chest, Bowels, Liver, and Kidneys; and in all Skin Complaints are one of the

BEST MEDICINES KNOWN.

Sold in boxes, price 7½d., 1s. 1½d., and 2s. 9d. each, by G. WHELPTON & SON, 3, Crane Court, Fleet Street, London; and by all Chemists and Medicine Vendors. Sent free on receipt of 8, 14, or 33 stamps. And can be obtained of all Wholesale Houses in London, Liverpool, Manchester, York, Hull, Leeds, Birmingham, Newcastle-on-Tyne, Glasgow, &c.